

Celsion CORP
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PROSPECTUS SUPPLEMENT
(TO PROSPECTUS DATED APRIL 17, 2009)

Celsion Corporation

5,000 Shares of 8% Series A Redeemable Convertible Preferred Stock

Warrants to Purchase 2,083,333 Shares of Common Stock

Pursuant to this prospectus supplement and the accompanying prospectus, we are offering up to 5,000 shares of our 8% series A redeemable convertible preferred stock and warrants to purchase up to 2,083,333 shares of our common stock to selected institutional investors under a securities purchase agreement dated January 12, 2011, between us and the investors. Each share of preferred stock has a stated value of \$1,000 and is convertible into shares of our common stock at an initial conversion price of \$2.40 per common share. The preferred stock and warrants will be sold in units, with each unit consisting of one (1) share of preferred stock and a warrant to purchase 416.6666 shares of common stock, at an initial exercise price of \$3.25 per whole share of common stock. Each unit will be sold at a negotiated price of \$1,000 per unit. Units will not be issued or certificated. The shares of preferred stock and warrants are immediately separable and will be issued separately.

Our common stock is traded on The NASDAQ Capital Market under the symbol "CLSN." On January 12, 2011, the last reported sale price of our common stock on The NASDAQ Capital Market was \$2.75 per share. There is no established trading market for our preferred stock or any of the warrants and we do not expect a market to develop. We do not intend to apply for a listing of the preferred stock or any of the warrants on any national securities exchange.

As of December 31, 2010, the aggregate market value of our outstanding common stock held by non-affiliates was approximately \$39,483,352, based on 13,331,096 shares of outstanding common stock, of which 343,151 shares are held by non-affiliates, and a per share price of \$3.04, based on the closing sale price of our common stock on November 17, 2010. As of the date hereof, we have not sold any securities pursuant to General Instruction I.B.6. of Form S-3 during the prior 12 calendar month period that ends on and includes the date hereof. We have retained Dominick & Dominick LLC to act as the placement agent in connection with this offering. The placement agent is not purchasing or selling any of these securities nor is it required to sell any specific number or dollar amount of securities, but has agreed to use its reasonable best efforts to sell the securities offered by this prospectus supplement.

Investing in our common stock involves a high degree of risk. For a discussion of the factors you should carefully consider before deciding to purchase our preferred stock, see "Risk Factors" on page S-7 of this prospectus supplement and page 4 of the accompany prospectus, as well as the risks discussed under the caption "Risk Factors" beginning on page 9 of our Annual Report on Form 10-K for the year ended December 31, 2009 and beginning on page 24 of our Quarterly Report on Form 10-Q for the quarter ended September 30, 2010, each of which is incorporated by reference in this prospectus supplement.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus supplement or the accompanying

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prospectus. Any representation to the contrary is a criminal offense.

| | Per Unit | Total |
|----------------------------------|------------|-------------|
| Public Offering Price | \$1,000.00 | \$5,000,000 |
| Placement Agent's Fees | \$70.00 | \$350,000 |
| Proceeds, before expenses, to us | \$930.00 | \$4,650,000 |

We estimate the total expenses of this offering, excluding the placement agent's fee, will be approximately \$300,000. We are not required to sell any specific number or dollar amount of the units offered in this offering, but the placement agent will use its reasonable best efforts to arrange for the sale of all of the units offered. Delivery of the shares of preferred stock and warrants is expected to be made on or about January 14, 2011, against payment for the units to be received by us on the same date.

Dominick & Dominick LLC

The date of this prospectus supplement is January 12, 2011

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ABOUT THIS PROSPECTUS SUPPLEMENT

This document is in two parts. The first part is the prospectus supplement which describes the specific terms of the securities we are offering and also adds to and updates information contained in the accompanying prospectus and the documents incorporated by reference into the accompanying prospectus. The second part, the accompanying prospectus, including the documents incorporated by reference, provides more general information, some of which may not apply to this offering. Generally, when we refer to this prospectus, we are referring to both parts of this document combined. To the extent there is a conflict between the information contained in this prospectus supplement, on the one hand, and the information contained in the accompanying prospectus or in any document incorporated by reference that was filed with the Securities and Exchange Commission, or the SEC, before the date of this prospectus supplement, on the other hand, you should rely on the information in this prospectus supplement. If any statement in one of these documents is inconsistent with a statement in another document having a later date — for example, a document incorporated by reference in the accompanying prospectus — the statement in the document having the later date modifies or supersedes the earlier statement.

In this prospectus supplement, unless we indicate otherwise, “we,” “us,” “our” and “Company” refer to Celsion Corporation.

This prospectus supplement and the accompanying prospectus are part of a registration statement on Form S-3 that we filed on April 3, 2009, with the SEC using a “shelf” registration process with respect to \$50,000,000 in securities that may be sold thereunder. The shelf registration statement was declared effective by the SEC on April 17, 2009.

Under the shelf registration process, we may offer and sell any combination of securities described in the accompanying prospectus in one or more offerings. The accompanying prospectus provides you with a general description of the securities we may offer. Each time we use the accompanying prospectus to offer securities, we will provide a prospectus supplement that will contain specific information about the terms of the offering. The prospectus supplement may also add, update or change information contained in the prospectus. The purpose of this prospectus supplement is to provide supplemental information regarding us in connection with this offering of preferred stock.

You should read this prospectus supplement along with the accompanying prospectus, together with the documents we incorporate by reference in this prospectus supplement and the accompanying prospectus, carefully before you invest. Both documents contain important information you should consider when making your investment decision.

You may rely only on the information contained in this prospectus supplement and the accompanying prospectus and the documents we incorporate by reference in this prospectus supplement and the accompanying prospectus. We have not authorized anyone to provide information or to make representations that are different. Neither this prospectus supplement nor the accompanying prospectus is an offer to sell or a solicitation of an offer to buy any securities other than those registered by this prospectus, nor is it an offer to sell or a solicitation of an offer to buy securities where an offer or solicitation would be unlawful. Neither the delivery of this prospectus supplement and the accompanying prospectus, nor any sale made under this prospectus supplement nor the accompanying prospectus, means that the information contained in this prospectus supplement is correct as of any time after the date of this prospectus supplement and the accompanying prospectus.

PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights certain information appearing elsewhere in this prospectus supplement and in the accompanying prospectus and in the documents we incorporate by reference. After you read this summary, you should read and consider carefully the more detailed information and financial statements and related notes that we include in and/or incorporate by reference into this prospectus supplement and the accompanying prospectus, especially the sections entitled “Risk Factors.” If you invest in our securities, you are assuming a high degree of risk.

Our Company

We are an innovative oncology drug development company focused on the development of treatments for those suffering with difficult to treat forms of cancer. We are working to develop and commercialize more efficient, effective, targeted chemotherapeutic oncology drugs based on our proprietary heat-activated liposomal technology. The promise of this drug technology is to maximize efficacy while minimizing side-effects common to cancer treatments.

Our lead product ThermoDox® is being evaluated in a Phase III clinical trial, which we refer to as the HEAT study, for primary liver cancer and a Phase I/II study for recurrent chest wall breast cancer. ThermoDox® is a liposomal encapsulation of doxorubicin, an approved and frequently used oncology drug for the treatment of a wide range of cancers. Localized mild hyperthermia (39.5-42 degrees Celsius) releases the encapsulated doxorubicin from the liposome enabling high concentrations of doxorubicin to be deposited preferentially in a targeted tumor.

We have also demonstrated feasibility for a product pipeline of cancer drugs that employ our heat activated liposomal technology in combination with known chemotherapeutics including docetaxel and carboplatin. We believe that our technology can improve efficacy and safety of anticancer agents whose mechanism of action and safety profile are well understood by the medical and regulatory communities. Our approach provides a comparatively cost effective, low risk approval pathway. Additionally, we have formed a joint research agreement with Royal Phillips Electronics to evaluate the combination of Phillips’ high intensity focused ultrasound with our ThermoDox® to determine the potential of this combination to treat a broad range of cancers.

For certain indications, we may seek licensing partners to share in the development and commercialization costs. We also will evaluate licensing cancer products from third parties for cancer treatments to expand our development pipeline.

In the fourth quarter of 2008, we entered into a licensing agreement with Yakult Honsha under which Yakult was granted the exclusive right to commercialize and market ThermoDox® for the Japanese market. We were paid a \$2.5 million up-front licensing fee and we have the potential to receive an additional \$18 million upon receipt of marketing approval by the Japanese Ministry of Health, Labor and Welfare. We also have the potential to receive additional milestone payments tied to the achievement of certain levels of sales and approval for new indications. We will receive double digit escalating royalties on the sale ThermoDox® in Japan, when and if any such sales occur. We also will be the exclusive supplier of ThermoDox® to Yakult.

In 2005, the Company made a strategic decision to divest its medical device business. We sold this business to Boston Scientific Corporation in 2007 for net aggregate payments of \$43 million, receiving \$13 million in 2007 and \$15 million in each of 2008 and 2009.

Recent Developments

Clinical and Product Developments

The U.S. Food and Drug Administration (the “FDA”) recently has designated our pivotal Phase III clinical study for ThermoDox®, in combination with radiofrequency ablation, as a Fast Track Development Program. We have received written guidance from the FDA stating that, assuming the results of our ongoing studies are adequate, we may submit our New Drug Application (“NDA”) for ThermoDox® pursuant to Section 505(b)(2) of the Federal Food, Drug and Cosmetic Act. A 505(b)(2) NDA provides that some of the information from the reports required for marketing approval may come from studies that the applicant does not own or for which the applicant does not

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have a legal right of reference and permits a manufacturer to obtain marketing approval for a drug without needing to conduct or obtain a right of reference for all of the required studies. The availability of Section 505(b)(2) and the designation of ThermoDox® as a Fast Track Development Program will provide us with an expedited pathway to approval. There can be no assurance, however, that the results of our ongoing studies will be adequate to obtain approval of ThermoDox® under Section 505(b)(2).

In addition, on October 1, 2010, we were advised that after reviewing data from 401 patients enrolled in our pivotal Phase III clinical study (the HEAT study) for ThermoDox®, the Data Monitoring Committee (the “DMC”) for this trial unanimously recommended that the trial continue to enroll patients with the goal of reaching the 600 patients required to complete the study. The DMC, comprised of an independent group of medical and scientific experts, reviews study data at regular intervals to ensure the safety of all patients enrolled in the trial, the quality of the data collected, and the continued scientific validity of the trial design. In addition, the DMC has recommended, and confirmed such recommendation on November 24, 2010, a hold on enrollment of additional patients in this trial in Japan in accordance with the requirements of the DMC’s charter pending review by the DMC of certain safety and efficacy data as required by the Pharmaceuticals and Medical Devices Agency (PMDA) in Japan. The DMC is expected to complete its review of this data at its next regularly scheduled meeting in early February 2011. The Company expects that the DMC will permit resumption of enrollment of patients in Japan after it has completed review of this data, but there can be no assurance that such permission will be granted by the DMC in February or at all. Notwithstanding this review period for patients in Japan, patient enrollment in this trial is continuing at 66 sites in ten other countries and the trial is over 82% enrolled toward the goal of 600 patients.

Liquidity and Capital Resources

On June 17, 2010, we entered into a financing arrangement, sometimes referred to as a committed equity line financing facility (the “CEFF”), with Small Cap Biotech Value, Ltd. (the “Purchaser”) that provides that, upon the terms and subject to the conditions set forth therein, the Purchaser is committed to purchase up to \$15.0 million worth of our common stock over the 24-month term of the Purchase Agreement, up to a maximum of 2,404,434 shares, under certain specified conditions and limitations. As of the date of this prospectus supplement, we have sold 1,069,919 shares of our common stock to the Purchaser pursuant to the CEFF for aggregate net proceeds of \$2,502,089, including 583,132 shares that were sold on December 30, 2010 for aggregate net proceeds of \$1,125,670.

On December 5, 2008, we entered into a Development, Product Supply and Commercialization Agreement for ThermoDox® with Yakult Honsha Co. (the “Yakult Agreement”) pursuant to which we granted to Yakult an exclusive license, solely in the Japanese market, to make, sell, import and use ThermoDox® for the indications set forth in the Yakult Agreement in consideration of certain milestone and royalty payments, including an \$18 million milestone payment upon approval of ThermoDox® by the Japanese Ministry of Health, Labor and Welfare for the treatment of primary liver cancer (the “Approval Milestone”). On January 11, 2011, the Company entered into an amendment to the Yakult Agreement (the “Amendment”) that provides for (i) a payment by Yakult to us of \$2 million that the Company received on the date hereof in consideration of a partial reduction in the Approval Milestone, and (ii) if and when the DMC permits the resumption of patient enrollment in Japan for pivotal Phase III clinical study for ThermoDox®, a payment by Yakult to us of an additional \$2 million in consideration of an additional, partial reduction in the Approval Milestone. Assuming payment by Yakult of the \$4 million contemplated by the Amendment and the partial reductions in the Approval Milestone related thereto, the aggregate Approval Milestone that we may receive in the future will have been reduced by approximately forty percent (40%).

Corporate Information

We were founded in 1982 and are a Delaware corporation. Our principal executive offices are located at 10220-L Old Columbia Road, Columbia, Maryland 21046. Our telephone number is (410) 290-5390 and our website is www.celsion.com. The information available on or through our websites is not a part of this prospectus supplement

and should not be relied upon.

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The Offering

Preferred Stock Offered Number and Designation: 5,350 shares (the "Preferred Shares") of Series A Redeemable Convertible Preferred Stock, par value \$0.01 per share (the "Preferred Stock").

Stated Value: Each share of Preferred Stock will have an initial "Stated Value" of \$1,000, subject to reduction upon conversion or redemption, by us or by the holder, as described below.

Mandatory Redemption: Any shares of Preferred Stock that remain outstanding on January 14, 2013 shall be subject to mandatory redemption by us for the Stated Value, plus accrued and unpaid dividends through and including January 14, 2013.

Dividends: The Preferred Stock is entitled to receive dividends on the Stated Value, at a rate of eight percent (8%) per annum, payable in cash.

Optional Conversion: A holder of shares of Preferred Stock may convert its shares of Preferred Stock to shares of our common stock at any time after the initial issuance date at a rate equal to the "Conversion Price." The Conversion Price initially will be \$2.40 per share, subject to adjustment as described below. Accrued and unpaid dividends on the Preferred Stock through and including the date of conversion shall be payable to the holder in cash.

Mandatory Conversion: The Preferred Stock shall automatically convert to common stock upon ten days notice to the holders of Preferred Stock of the occurrence of any of the following events: (i) our completion of an offering of our common stock for gross proceeds of not less than \$10,000,000 for a per share price of not less than \$4.00 per share of common stock; (ii) the average closing price of our common stock over any 20 consecutive trading days is at least \$6.00 per share; or (iii) we receive at least \$4,000,000 as actual, or advanced payment of future, license, milestone or royalty payments not involving the issuance of equity securities by us pursuant to a licensing, development or other agreement between us and any strategic, development or licensing partner, including without limitation any such payments pursuant to our development, product supply and commercialization agreement with Yakult.

Adjustments to Conversion Price: The conversion price of the Preferred Stock will be adjusted to reflect any stock splits, stock dividends, recapitalization, reorganization and similar capital events proportionately. In the event of a consolidation of our common stock, such as a reverse stock split, the conversion price of the Preferred Stock will be proportionately increased.

Liquidation Preference: In the event of a liquidation event, before any amounts are made available to the holders of our common stock, the holders of the Preferred Stock will be entitled to receive in cash, out of our assets, an amount per share of Preferred Stock equal to the Stated Value, with accrued and unpaid dividends through the date of the liquidation event. After the payment of the liquidation Preference and accumulated and unpaid dividends on the Preferred Stock, the holders of Preferred Stock as such shall have no right or claim to any of our remaining assets.

Negative Covenants: While the Preferred Stock is outstanding, we may not, without the consent of the holders of 66 and 2/3% of the outstanding Preferred Stock, (i) incur any additional indebtedness, with the exception of indebtedness incurred in connection with licensing agreements relating to the development of our products and certain ordinary course equipment leases, capital leases, obligations to vendors and similar exceptions, or (ii) authorize, issue or create any class or series of stock that is senior to the Preferred Stock.

Voting Rights. Preferred Stock shall be voted equally with the shares of our common stock on as-converted basis. In addition, while at least a majority of the issued shares of Preferred Stock is outstanding, we may not, without the consent of the holders of 66 and 2/3% of the outstanding Preferred Stock, (i) authorize, issue or create any class or series of stock that is on parity with the Preferred Stock, or (ii) amend, alter or repeal any provision of our Certificate of Incorporation or Bylaws in a manner that adversely affects the powers, preferences or rights of the Preferred Stock. After at least 51% of the Preferred Stock has been converted or redeemed, the consent threshold shall be reduced from 66 and 2/3% to a majority of the outstanding Preferred Stock.

Notice of Certain Events. We are required to provide the holders of Preferred Shares with twenty (20) business days advanced notice of any liquidation or distribution event or certain fundamental transactions relating to a merger, sale of substantially all of our assets or a change in control. Such holders will be permitted to exercise conversion rights up to and including the effective date of any such transaction. Within five (5) business days after the completion of any such transaction, we must provide written notice to holders of the Preferred Stock of the material terms and effect of the transaction on the Preferred Stock.

Preferred Stock Outstanding After Offering 5,000 shares of Series A Redeemable Convertible Preferred Stock.

Common Stock Warrants Offered We are issuing warrants to purchase up to an aggregate of 2,083,333 shares of our common stock. The common stock warrants will be exercisable during the period commencing on the six month anniversary of the date of original issuance and ending sixty-six (66) months from the date of such issuance at an exercise price of \$3.25 per share of common stock.

The exercise price of the Warrants will be adjusted to reflect any stock splits, stock dividends, recapitalization, reorganization and similar capital events proportionately. In the event of a consolidation of our common stock, such as a reverse stock split, the exercise price of the Preferred Stock will be proportionately increased.

Common Stock Outstanding After Offering 13,331,096 shares (1)

Use of proceeds We currently intend to use the net proceeds from the sale of the preferred stock pursuant to this offering for general corporate purposes, including the funding of our clinical development pipeline of cancer drugs.

Risk Factors You should carefully consider, in addition to the other information contained in or incorporated by reference into this prospectus supplement, the specific risks set forth under the caption "Risk Factors" section beginning on page S-7 of this prospectus supplement and page 4 of the accompanying prospectus, as well as the risks discussed under the caption "Risk Factors" beginning on page 9 of our Annual Report on Form 10-K for the year ended December 31, 2009 and beginning on page 24 of our Quarterly Report on Form 10-Q for the quarter ended September 30, 2010, each of which is incorporated by reference in this prospectus supplement.

NASDAQ Capital Market Symbol Our common stock is listed on The NASDAQ Capital Market under the trading symbol "CLSN." There is no established public trading market for the offered shares of Preferred Stock or any of the Warrants and we do not expect a market to develop. We do not intend to apply for a listing of the Preferred Stock or any of the Warrants on any national securities exchange. We have applied for a listing of the shares of our common stock issuable upon conversion of the Preferred Stock or exercise of the Warrants.

Common Stock Offered This prospectus supplement also relates to the offering of the shares of our common stock into which the Preferred Stock may be converted.

(1) Assumes 13,331,096 shares of common stock outstanding as of December 31, 2010 and excludes an aggregate of (a) 2,083,333 shares of common stock issuable upon conversion of the Preferred Stock; (b) 2,083,333 shares of common stock issuable upon exercise of the Warrants; (c) 3,254,122 shares of common stock subject to outstanding options, restricted stock awards and other warrants; and (d) 1,265,542 shares of common stock reserved for issuance under our equity incentive plans.

RISK FACTORS

Investing in our common stock involves a high degree of risk. Before purchasing our securities, you should carefully review and consider the risk factors described below, the risk factors beginning on page 4 of the accompanying prospectus, as well as the risks discussed under the caption “Risk Factors” in our Annual Report on Form 10-K for the year ended December 31, 2009, and in our Quarterly Report on Form 10-Q for the nine-month period ended September 30, 2010, each of which is incorporated by reference into this prospectus supplement. If any of these risks actually occur, our business, financial condition and results of operations would suffer. In that case, the trading price of our common stock would likely decline and you might lose all or part of your investment in our securities. Additional risks not presently known to us or that we currently deem immaterial may also impair our business, financial condition or results of operations. See also the information contained under the heading “Special Note Regarding Forward- Looking Statements” immediately below.

Risks Relating to this Offering

We do not generate operating income and will require additional financing in the future. If additional capital is not available, we may have to curtail or cease operations.

Our business currently does not generate the cash that is necessary to finance our operations. We incurred net losses of \$13.5 million in the first nine months of 2010, \$15.2 million in 2009 and \$11.8 million in 2008. Subject to the success of our clinical trials and potential licensing and development transactions, we may need to raise additional capital to fund research and development, to develop and commercialize our products. Our future capital needs depend on many factors, including the scope, duration and expenditures associated with our clinical trials, the outcome of potential licensing transactions, if any, competing technological developments and the regulatory approval process for our products.

We may seek to raise necessary funds through public or private equity offerings, debt financings or additional strategic alliances and licensing arrangements. We may not be able to obtain additional financing on terms favorable to us, if at all. General market conditions may make it very difficult for us to seek financing from the capital markets. We may be required to relinquish rights to our technologies or products, or grant licenses on terms that are not favorable to us in order to raise additional funds through alliance, joint venture or licensing arrangements. If adequate funds are not available, we may have to delay, reduce or eliminate one or more of our research or development programs and reduce overall overhead expenses. Such events could cause our independent registered public accounting firm to indicate that there may be substantial doubt about our ability to continue as a going concern in future periods.

We may not have the cash necessary to pay the dividends on the Preferred Stock or to redeem the Preferred Stock.

We have the obligation to make quarterly dividend payments on the Preferred Stock commencing April 15, 2011, which mandatory dividend payments must be made in cash. In addition, on January 14, 2013 we are required to redeem for cash all shares of the Preferred Stock then outstanding at the Stated Value of \$1,000 per share plus accrued and unpaid dividends. No assurance can be given that we will have the cash or financial resources available to us to make these payments, in whole or in part, and any failure to make such payments could have a material adverse effect on our business and financial condition and may impair our ability to continue in business as a going concern.

The Preferred Stock is a senior obligation of ours, and ranks senior to our common stock with respect to dividends, distributions and payments upon liquidation.

The rights of the holders of the Preferred Stock rank senior to the obligations to our common stock holders. Upon our liquidation, the holders of Preferred Stock are entitled to receive a liquidation preference of \$1,000 per share, plus all accrued but unpaid dividends at the rate of 8% per annum, prior and in preference to any distribution to the holders of any other class of our equity securities. The existence of such a senior security could have an adverse effect on the value of our common stock.

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Holders of the Preferred Stock have rights that may restrict our ability to operate our business.

Under the certificate of designations establishing the terms of the Preferred Stock, we are limited, with certain exceptions, in our ability to incur debt other than in connection with licensing agreements relating to the development of our products and ordinary course equipment leases, capital leases, obligations to vendors and similar exceptions, to issue any series or class of securities that is senior to or on parity with the Preferred Stock, or to take any other actions that may be deemed to adversely affect the rights of holders of the Preferred Stock. Such restrictions may have an adverse effect on our ability to operate our business while the Preferred Stock is outstanding.

The market price of our common stock may be volatile, and the value of your investment could decline significantly.

The trading price for our common stock has been, and we expect it to continue to be, volatile. The price at which our common stock trades depends upon a number of factors, including our historical and anticipated operating results, our financial situation, announcements of technological innovations or new products by us or our competitors, our ability or inability to raise the additional capital we may need and the terms on which we raise it, and general market and economic conditions, some of which are beyond our control. These broad market fluctuations may lower the market price of our common stock and affect the volume of trading in our stock.

Because the Preferred Stock is convertible into shares of our common stock, volatility or depressed prices for our common stock could have a similar effect on the value of the Preferred Stock. Holders of Preferred Stock who receive our shares of common stock upon conversion of their Preferred Stock will be subject to the risk of volatile market prices and wide fluctuations in the market price of our shares of common stock. In addition, many of the factors listed above are beyond our control. These factors may cause the market price of our shares of common stock to decline, regardless of our financial condition, results of operations, business or prospects. It is impossible to assure you that the market prices of our shares of common stock will not fall in the future.

Our stockholders will experience significant dilution upon the issuance of common stock upon conversion of Preferred Stock, upon the exercise of the Warrants, if we issue additional equity securities in future financing transactions and if the shares of our common stock underlying our other outstanding warrants are purchased.

The issuance of common stock upon conversion of some or all of the Preferred Stock will dilute the ownership interests of our existing holders of our shares of common stock. If the initial aggregate Stated Value of the Preferred Stock is converted into our common stock at its initial conversion price, we would issue 2,083,333 shares of common stock upon their conversion. In addition, we have a significant number of securities convertible into, or allowing the purchase of our common stock, including 2,083,333 shares of common stock issuable upon exercise of the Warrants and 1,009,076 shares of common stock issuable upon exercise of warrants we issued in September 2009. Investors could be subject to increased dilution upon the conversion or exercise of these securities. The issuance of additional shares as a result of such conversion or purchase, or their subsequent sale, could adversely affect the price of our common stock.

Investors in our company will be subject to increased dilution upon conversion of our preferred stock and upon the exercise of outstanding stock options and warrants. There were 13,331,096 shares of our common stock outstanding as of December 31, 2010. As of that date, outstanding stock options and warrants that are exercisable represented an additional 2,159,142 shares of our common stock that could be issued in the future. Most of the outstanding shares of our common stock, as well as the vast majority of the shares of our common stock that may be issued under our outstanding options and warrants, are not restricted from trading and either have been registered under the Securities Act or have the contractual right to be so registered. Any significant increase in the number of shares offered for sale could cause the supply of our common stock available for purchase in the market to exceed the purchase demand for

our common stock. Such supply in excess of demand could cause the market price of our common stock to decline.

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Future sales of our common stock in the public market could cause our stock price to fall.

Sales of a substantial number of shares of our common stock in the public market, or the perception that these sales might occur, could depress the market price of our common stock and could impair our ability to raise capital through the sale of additional equity securities. As of December 31, 2010, we had 13,331,096 shares of common stock outstanding, all of which shares, other than shares held by our directors and certain officers were eligible for sale in the public market, subject in some cases to compliance with the requirements of Rule 144, including the volume limitations and manner of sale requirements. In addition, all of the shares of common stock issuable upon conversion of the preferred stock or exercise of the warrants offered under this prospectus supplement and the accompanying prospectus will be freely tradable without restriction or further registration upon issuance.

We have broad discretion in the use of the net proceeds from this offering and may not use them as an investor may not agree.

Our management will have broad discretion in the application of the net proceeds from this offering and could spend the proceeds in ways with which you may not agree. Accordingly, you will be relying on the judgment of our management with regard to the use of these net proceeds, and you will not have the opportunity, as part of your investment decision, to assess whether the proceeds are being used appropriately. It is possible that the proceeds will be invested or otherwise used in a way that does not yield a favorable, or any, return for our company.

We have never paid dividends on our common stock and we do not anticipate paying any cash dividends on our common stock in the foreseeable future.

We have never declared or paid cash dividends on our common stock. We do not anticipate paying any cash dividends on our common stock in the foreseeable future. We currently intend to retain all available funds and any future earnings to fund the development and growth of our business. As a result, capital appreciation, if any, of our common stock will be the sole source of gain for the foreseeable future for holders of our common stock.

Our ability to use net operating losses to offset future taxable income may be subject to certain limitations.

We currently have significant net operating losses, or NOLs, that may be used to offset future taxable income. In general, under Section 382 the Internal Revenue Code of 1986, as amended (the "Code"), a corporation that undergoes an "ownership change" is subject to limitations on its ability to utilize its pre-change NOLs to offset future taxable income. This offering or future changes in our stock ownership, some of which are outside of our control, could result in an ownership change under Section 382 of the Code, which would significantly limit our ability to utilize NOLs to offset future taxable income.

Investors in this offering will pay a higher price than the book value of our common stock.

Investors in this offering will suffer substantial dilution in the net tangible book value of the common stock they purchase in this offering (such as by exercise of the common stock warrants offered hereby or upon conversion of Preferred Stock at the applicable rates) because the price per share of our common stock being offered hereby is substantially higher than the current book value per share of our common stock. For example, based on the initial common stock warrant exercise price of \$3.25 per common share, and assuming the exercise immediately following completion of the offering of all of the common stock warrants offered hereby into 2,083,333 shares of common stock), investors exercising warrants to purchase common stock would suffer immediate and substantial dilution of \$2.85 per share in the net tangible book value of the common stock. See "Dilution" on page S-17 for a more detailed discussion of the dilution you will incur in this offering.

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CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS

Certain statements contained or incorporated by reference in this prospectus, in any applicable prospectus supplement and in any related free writing prospectus, constitute forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 and releases issued by the SEC and within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. In addition, from time to time we may publish forward-looking statements relating to such matters as anticipated financial performance, business prospects, technological developments, new products, research and development activities and other aspects of our present and future business operations and similar matters that also constitute such forward-looking statements. These statements involve known and unknown risks, uncertainties, and other factors that may cause our or our industry's actual results, levels of activity, performance, or achievements to be materially different from any future results, levels of activity, performance, or achievements expressed or implied by such forward-looking statements. Such factors include, among other things:

- unforeseen changes in the course of research and development activities and in clinical trials;
 - possible changes in cost and timing of development and testing, capital structure, and other financial items;
- changes in approaches to medical treatment;
- introduction of new products by others;
- possible acquisitions of other technologies, assets or businesses;
- possible actions by customers, suppliers, strategic partners, potential strategic partners, competitors and regulatory authorities; and
- those listed under the header "Risk Factors" contained in the applicable prospectus supplement and any related free writing prospectus, and under the same and similar headings in the other documents that are incorporated by reference into this prospectus.

In some cases, you can identify forward-looking statements by terminology such as "expect," "anticipate," "estimate," "plan," "believe," "could," "intend," "predict," "may," "will," "should," "will" and words of similar import regarding the Company's expectations. Forward-looking statements are only predictions and actual events or results may differ materially. Although we believe that our expectations are based on reasonable assumptions within the bounds of our current knowledge of our industry, business and operations, we cannot guarantee that actual results will not differ materially from our expectations. In evaluating such forward-looking statements, you should specifically consider various factors, including the risks outlined under the heading "Risk Factors" contained in the applicable prospectus supplement and any related free writing prospectus, and in our most recent annual report on Form 10-K and in our most recent quarterly report on Form 10-Q, as well as any amendments thereto reflected in subsequent filings with the SEC. The discussion of risks and uncertainties set forth in those filings is not necessarily a complete or exhaustive list of all risks facing the Company at any particular point in time. We operate in a highly competitive, highly regulated and rapidly changing environment, and our business is in a state of evolution. Therefore, it is likely that new risks will emerge, and that the nature and elements of existing risks will change, over time. It is not possible for management to predict all such risk factors or changes therein, or to assess either the impact of all such risk factors on our business or the extent to which any individual risk factor, combination of factors, or new or altered factors, may cause results to differ materially from those contained in any forward-looking statement. Also, these forward-looking statements represent our estimates and assumptions only as of the date such forward-looking statements are made. You should carefully

read this prospectus, the applicable prospectus supplement and any related free writing prospectus, together with the information incorporated herein by reference as described under the section entitled “Where You Can Find Additional Information,” and with the understanding that our actual future results may be materially different from what we expect.

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Except as required by law, forward-looking statements speak only as of the date they are made, and we assume no obligation to update any forward-looking statements publicly, or to update the reasons why actual results could differ materially from those anticipated in any forward-looking statements, even if new information becomes available.

USE OF PROCEEDS

We estimate that our net proceeds from the sale of the securities offered pursuant to this prospectus supplement will be approximately \$4.35 million, after deducting the Placement Agent fees and estimated offering expenses that are payable by us. We currently intend to use the net proceeds from the sale of the securities pursuant to this offering for general corporate purposes, including the funding of the clinical development of our product pipeline of cancer drugs.

Pending the application of the net proceeds, we intend to invest the net proceeds in short-term, investment grade, interest-bearing securities.

RATIO OF EARNINGS TO FIXED CHARGES AND PREFERENCE SECURITY DIVIDENDS

The following table sets forth our ratio of earnings to fixed charges and the ratio of our combined fixed charges and preference stock dividends to earnings on a historical basis for the periods indicated. For purposes of this calculation, "earnings" consist of net loss from continuing operations plus fixed charges, or net income less fixed charges. "Fixed charges" consist of the sum of interest expense and the component of rental expense believed by management to be representative of the interest factor for those amounts. We had no preference stock dividends over the indicated periods, so that the ratio of earnings to combined fixed charges and preference security dividends is the same as the ratio of earnings to fixed charges. Except for 2007, earnings in each of the periods indicated were inadequate to cover fixed charges. The coverage deficiency for each period is specified below.

| | Year Ended December 31, | | | | | Nine Months |
|--------------------------------------|-------------------------|-------|------|--------|--------|--------------------------------|
| | 2005 | 2006 | 2007 | 2008 | 2009 | Ended September 30, 2010 |
| Ratio of Earnings to Fixed Charges | — | — | 49.9 | — | — | — |
| Coverage Deficiency (in \$ millions) | (8.9) | (8.7) | — | (11.9) | (15.3) | (13.5) |

DESCRIPTION OF SECURITIES WE ARE OFFERING

In this offering, we are offering units consisting of (i) one share of our Series A 8% Redeemable Convertible Preferred Stock, par value \$0.01 per share, and (ii) one warrant to purchase 416.6666 shares of our common stock, par value \$0.01 per share, together with any associated rights, at an exercise price of \$3.25 per share, exercisable any time from July 14, 2011 through July 14, 2016. Units will not be issued or certificated. The shares of preferred stock and warrants are immediately separable and will be issued separately. This prospectus also relates to the offering of shares of our common stock upon exercise, if any, of the warrants, as well as the issuance of shares of our common stock upon any conversion of the preferred stock.

Preferred Stock

General. We are authorized to issue up to 100,000 shares of preferred stock, par value \$0.01 per share, with such designations, rights and preferences as may be determined from time to time by our Board of Directors, without further stockholder approval. Accordingly, our Board of Directors has created out of the authorized and unissued shares of our preferred stock, a series of preferred stock designated as the Series A Redeemable Convertible Preferred Stock (the "Preferred Stock"), comprising up to 5,350 shares of Preferred Stock (the "Preferred Shares").

The following is a brief description of the terms of the Preferred Stock being offered in this offering. The description of the Preferred Stock contained herein does not purport to be complete and is qualified in its entirety by reference to the Certificate of Designations for the Preferred Stock which will be filed as an exhibit to a Current Report on Form 8-K to be filed with the SEC by us in connection with this offering.

Stated Value. Each share of Preferred Stock will be issued with an initial Stated Value of \$1,000 per share (the "Stated Value").

Dividends. Holders of the Preferred Shares shall be entitled to receive dividends payable in cash on the outstanding Stated Value of the Preferred Shares at the per share rate of eight percent (8%) per annum, which shall be cumulative. Dividends on the Preferred Shares will commence accruing on the date of their issuance and will be computed on the basis of a 365-day year and actual days elapsed. Dividends will be payable in arrears on each dividend date. A "dividend date" is defined in the certificate of designations as April 15, July 15, October 15 and January 15 of each year beginning April 15, 2011. Dividends will be payable on each dividend date to the record holders of the Preferred Shares on each of March 31, June 30, September 30 and December 31 corresponding to the applicable dividend date.

Optional Conversion. A holder of Preferred Shares may convert the Preferred Shares to shares of our common stock at any time after the initial issuance date at a rate equal to the "Conversion Price." The Conversion Price initially will be \$2.40 per share, subject to adjustment as described below. Accrued and unpaid dividends on the Preferred Shares through and including the date of conversion shall be payable to the holder in cash. On and after the close of business on the date of any such conversion, the holder converting such Preferred Shares shall be deemed to be the holder of record of the common stock issuable upon such conversion, such Preferred Shares shall cease to be outstanding, dividends with respect to such Preferred Shares shall cease to accumulate and all rights whatsoever with respect to such shares (except the right to receive the common stock, any accrued and unpaid dividends to the date of such conversion in cash and any cash in lieu of fractional shares of common stock due in connection with such conversion)

shall terminate.

Mandatory Conversion. The Preferred Shares shall automatically convert to common stock upon ten days notice to the holders of Preferred Shares of the occurrence of any of the following events: (i) our completion of an offering of our common stock for gross proceeds of not less than \$10,000,000 for a per share price of not less than \$4.00 per share of common stock; (ii) the average closing price of our common stock over any 20 consecutive trading days is at least \$6.00 per share; or (iii) we receive at least \$4,000,000 as actual, or advanced payment of future, license, milestone or royalty payments not involving the issuance of equity securities by us pursuant to a licensing, development or other agreement between us and any strategic, development or

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licensing partner, including without limitation any such payments pursuant to our development, product supply and commercialization agreement with Yakult. The Conversion Price initially will be \$2.40 per share, subject to adjustment as described below. Accrued and unpaid dividends on the Preferred Shares through and including the date of conversion shall be payable to the holder in cash. On and after the close of business on the date of any such conversion, the holder converting such Preferred Shares shall be deemed to be the holder of record of the common stock issuable upon such conversion, such Preferred Shares shall cease to be outstanding, dividends with respect to such Preferred Shares shall cease to accumulate and all rights whatsoever with respect to such shares (except the right to receive the common stock, any accrued and unpaid dividends to the date of such conversion in cash and any cash in lieu of fractional shares of common stock due in connection with such conversion) shall terminate.

Mandatory Redemption Date. If any Preferred Shares remain outstanding on January 14, 2013 (the “Mandatory Redemption Date”), we will redeem those Preferred Shares in cash in an amount equal to the Stated Value of those Preferred Shares plus the accrued and unpaid dividends on those shares through and including the Mandatory Redemption Date. After the redemption of the Preferred Shares upon payment to the holders of the Preferred Shares of the full amount of the Stated Value and accrued and unpaid dividends to which they are entitled, such Preferred Shares shall cease to be outstanding, dividends with respect to such Preferred Shares shall cease to accumulate and all rights whatsoever with respect to such Preferred Shares shall terminate.

Adjustments to Conversion Price. If at any time after the date of issuance of the Preferred shares we subdivide (by any stock split, stock dividend, recapitalization, reorganization, scheme, arrangement or otherwise) one or more classes of our outstanding shares of common stock into a greater number of shares, the conversion price in effect immediately prior to such subdivision will be proportionately reduced. If at any time after the date of issuance of the Preferred Shares we combine (by any stock split, stock dividend, recapitalization, reorganization, scheme, arrangement or otherwise) one or more classes of our outstanding shares of common stock into a smaller number of shares, the conversion price in effect immediately prior to such combination will be proportionately increased. Any adjustments to the conversion price shall become effective immediately after the close of the business on the record date for such dividend or distribution, or immediately after the open of business on the effective date for such share split or share combination. If any stock split, stock dividend, recapitalization, reorganization, scheme or arrangement is declared but not so paid or made, the conversion price shall be immediately readjusted, effective as of the date our board of directors determines not to effect such stock split, stock dividend, recapitalization, reorganization, scheme or arrangement, to the conversion price that would then be in effect if such stock split, stock dividend, recapitalization, reorganization, scheme or arrangement had not been effected.

Equal Treatment of Holders. No consideration shall be offered or paid to any of the holders to amend or waive or modify any provision of the Preferred Shares or common stock warrants, unless the same consideration is also offered to all of the holders. This is a separate right granted to each of the holders by us and shall not in any way be construed as the holders acting in concert or as a group with respect to the purchase, disposition or voting of securities or otherwise.

Negative Covenants. As long as any Preferred Shares are outstanding, unless holders of at least 66 and 2/3% of the issued Preferred Stock then outstanding shall have otherwise given prior written consent, we will not authorize, issue or create any class or series of stock that is senior to the Preferred Stock, nor will we directly or indirectly incur or guarantee, assume or suffer to exist any indebtedness, other than (i) equipment leases, capital leases, obligations to vendors and other indebtedness provided in good faith that entails commercial benefits, (ii) indebtedness of the Company outstanding on the initial issuance date, or (iii) indebtedness of the Company incurred in connection with the entry into a licensing agreement relating to the development of the

Company's products.

Notice of Certain Events. We are required to provide the holders of Preferred Shares with twenty (20) business days advanced notice of any liquidation or distribution event or certain fundamental transactions relating to a merger, sale of substantially all of our assets or a change in control. Such holders will be permitted to exercise conversion rights up to and including the effective date of any such transaction. Within five (5) business days after the effective date of any such transaction, we shall provide written notice to the each holder of the Preferred Stock of the completion of such transaction, the effect of such transaction on such holder's Preferred Stock, and a description

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of the material terms of any consideration payable or issuable to such holder in respect of such holder's Preferred Stock, including the designations, rights, privileges and preferences of any securities.

Liquidation Preference. In the event of either a voluntary or involuntary liquidation, dissolution or winding up of us, the assets of which constitute all or substantially all of the assets of our business, in a single transaction or series of transactions (a "Liquidation Event"), the holders shall be entitled to receive in cash out of our assets, whether from capital or from earnings available for distribution to our stockholders (the "Liquidation Funds"), before any amount shall be paid to the holders of any of our capital stock of any class junior in rank to the Preferred Shares in respect of the preferences as to distributions and payments on our liquidation, dissolution and winding up, an amount per Preferred Share equal to the sum of the Stated Value of the Preferred Shares plus accrued and unpaid dividends through and including the effective date of the Liquidation Event. After the payment to the holders of the Preferred Shares of full amount of the liquidation preference and accumulated and unpaid dividends to which they are entitled, the holders of Preferred Shares as such shall have no right or claim to any of the remaining assets of the Company.

If the Liquidation Funds are insufficient to pay the full amount due to the holders and holders of shares of other classes or series of our preferred stock that are of equal rank with the Preferred Shares as to payments of Liquidation Funds (the "Pari Passu Shares"), if any, then each holder and each holder of any such Pari Passu Shares shall receive a percentage of the Liquidation Funds equal to the full amount of Liquidation Funds payable to such holder as a liquidation preference, in accordance with their respective certificate of designations, preferences and rights, as a percentage of the full amount of Liquidation Funds payable to all holders of Preferred Stock and Pari Passu Shares.

Voting Rights. Preferred Shares shall be voted equally with the shares of our common stock as a single class with respect to all matters submitted to the holders of common stock at any annual or special meeting of stockholders of the Company, or the holders of Preferred Shares may act by written consent in the same manner as holders of common stock, upon the following basis: each holder of one or more Preferred Stock shall be entitled to notice of any stockholders' meeting in accordance with applicable law and our bylaws and to such number of votes for the Preferred Shares held by such holder immediately after the close of business on the record date fixed for such meeting, or on the effective date of such written consent, as shall be equal to the number of whole shares of common stock into which all of such holder's Preferred Shares are convertible immediately after the close of business on the record date fixed for such meeting or the effective date of such written consent. Fractional votes shall not, however, be permitted and any fractional voting rights resulting from the above formula with respect to any holder of Preferred Shares shall be rounded to the nearest whole number (with one-half rounded upward to one).

From and after the date of issuance of the Preferred Stock until such time as at least fifty-one percent (51%) of the authorized and issued shares of Preferred Stock have been converted or redeemed, without the consent or affirmative vote of the holders of at least 66 and 2/3% of the outstanding shares of Preferred Stock, voting separately as a class, we shall not: (i) authorize, create or issue any shares of any other class or series of Pari Passu Shares (or any security convertible into Pari Passu Shares), or (ii) amend, alter or repeal any provision of our certificate of incorporation or bylaws in a manner that adversely affects the powers, preferences or rights of the Preferred Stock. From and after the date on which at least fifty-one percent (51%) of the authorized and issued shares of Preferred Stock are no longer outstanding, the consent required of the holders of outstanding shares of Preferred Stock, voting separately as a class, to effect any of these actions shall be reduced from 66 and 2/3% to a majority of the outstanding shares of Preferred Stock.

Ranking. All shares of common stock shall be of junior rank to all Preferred Shares with respect to the preferences as to dividends, distributions and payments upon our liquidation, dissolution and winding up. The rights of the shares of common stock shall be subject to the preferences and relative rights of the Preferred Shares. In the event of our merger or consolidation with or into another corporation, the Preferred Shares shall maintain their relative powers, designations and preferences provided for herein.

Warrants

The following is a brief summary of the warrants and is subject in all respects to the provisions contained in the warrants, the form of which will be filed as an exhibit to a Current Report on Form 8-K to be filed with the SEC by us in connection with this offering.

Exercisability. Holders may exercise warrants at any time from and after July 14, 2011 up to 11:59 p.m., New York time, on July 14, 2016. The warrants are exercisable, at the option of each holder, in whole or in part, by delivering to us a duly executed exercise notice accompanied by payment in full for the number of shares of our common stock purchased upon such exercise (except in the case of a cashless exercise in limited circumstances discussed below). The holder of warrants does not have the right to exercise any portion of the warrant if the holder would beneficially own in excess of 4.99% of the shares of our common stock outstanding immediately after giving effect to such exercise. This percentage may, however, be raised or lowered to an amount not to exceed 9.99% at the option of the holder upon at least 61 days' prior notice from the holder to us.

Cashless Exercise. If, and only if, a registration statement covering the issuance of the shares of common stock issuable upon exercise of the warrants is not effective at the time of exercise of the warrants, the holder may, at its option, exercise its warrants on a cashless basis. When exercised on a cashless basis, a portion of the warrant is cancelled in payment of the purchase price payable in respect of the number of shares of our common stock purchasable upon such exercise.

Exercise Price. The exercise price of common stock purchasable upon exercise of the warrants is \$3.25 per share. The exercise price and the number of shares issuable upon exercise of the warrants is subject to appropriate adjustment in the event of recapitalization events, stock dividends, stock splits, stock combinations, reclassifications or similar events affecting our common stock, and also upon any distributions of assets, including cash, stock or other property to our stockholders.

Transferability. The warrants may be transferred at the option of the holder upon surrender of the warrants with the appropriate instruments of transfer.

Purchase Rights, Fundamental Transactions and Change of Control. If we sell or grant any rights to purchase stock, warrants or securities or other property to our stockholders on a pro rata basis, we will provide the holders of warrants with the right to acquire, upon the same terms, the securities subject to such purchase rights as though the warrant had been exercised immediately prior to the declaration of such rights. If we consummate any fundamental transaction, as described in the warrants and generally including any consolidation or merger into another corporation, the consummation of a transaction whereby another entity acquires more than 50% of our outstanding common stock, the sale of all or substantially all of our assets, or another transaction in which our common stock is converted into or exchanged for other securities or other consideration, the holder of warrants will thereafter receive upon exercise of the warrants the securities or other consideration to which a holder of the number of shares of common stock then deliverable upon the exercise or conversion of such warrants would have been entitled upon such consolidation, merger or other transaction.

Exchange Listing. We do not plan on making an application to list the warrants on the NASDAQ Capital Market, any national securities exchange or other nationally recognized trading system. Our common stock underlying the warrants is listed on the NASDAQ Capital Market.

Rights as Stockholder. Except as otherwise provided in the warrants (such as the rights described above of a warrant holder upon our sale or grant of any rights to purchase stock, warrants or securities or other property to our stockholders on a pro rata basis) or by virtue of such holder's ownership of shares of our common stock, the holders of

the warrants do not have the rights or privileges of holders of our common stock, including any voting rights, until they exercise their warrants.

Fractional Shares. No fractional shares of common stock will be issued upon the exercise of the warrants. Rather, the number of shares of common stock to be issued will be rounded down to the nearest whole number.

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Common Stock

As of January 12, 2011, our authorized capital stock consists of 75,000,000 shares of common stock, \$0.01 par value per share, and 100,000 shares of preferred stock, \$0.01 par value per share, of which 15,000 shares of Series C Junior Participating Preferred Stock were reserved for issuance under our stockholder rights plan. A description of our stockholder rights plan and all other rights, privileges and preferences of our common stock is set forth under the heading "Description of Capital Stock," starting on page 7 of the accompanying prospectus.

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DILUTION

If you invest in our units, your interest in the common stock underlying the securities contained therein (such as by exercise of the common stock warrants at their initial exercise price) may be diluted to the extent of the difference between the price you pay per share of our common stock and the net tangible book value per share of our common stock after this offering. Our net tangible book value on September 30, 2010 was approximately \$(887,600), or \$(0.07) per share of common stock. Net tangible book value per share is calculated by subtracting our total liabilities from our total tangible assets, which is total assets less intangible assets, and dividing this amount by the number of shares of common stock outstanding. Dilution in net tangible book value per share represents the difference between the amount per share paid by purchasers of our common stock in this offering and the net tangible book value per share of common stock immediately after the completion of this offering. The following table illustrates the dilution applicable to purchasers of common stock upon exercise of the common stock warrants included in the units in this offering. For purposes of this calculation, (i) the entire purchase price for the unit is being allocated to the preferred stock contained in the unit, (ii) we assume that all common stock warrants included in the units will be exercised in cash immediately following the closing at their initial exercise price, (iii) all Placement Agent fees and our estimated offering expenses are allocated to the preferred stock and not the warrants, and (iv) we exclude both the effect of the receipt of the purchase price for the units in this offering and the potential effect of any conversion of our preferred stock into shares of our common stock. Without taking into account any other changes in our net tangible book value after September 30, 2010, other than to give effect to our receipt of the estimated proceeds from the assumed exercise of common stock warrants covering 2,083,333 shares of common stock at an initial exercise price of \$3.25 per share, our pro forma net tangible book value as of September 30, 2010, would have been approximately \$5.8 million, or \$0.40 per share. This represents an immediate increase in the net tangible book value of \$0.47 per share to our existing stockholders, and an immediate dilution in net tangible book value of \$2.85 per share to investors in this offering upon exercise of all of the warrants issued in this offering. The following table illustrates this per share dilution:

| | |
|---|-----------|
| Exercise price per share of warrants included in each unit: | \$ 3.25 |
| Net tangible book value per share as of September 30, 2010: | \$ (0.07) |
| Increase in net tangible book value per share attributable to investors participating this offering upon exercise of common stock warrants: | \$ 0.47 |
| As adjusted net tangible book value per share after giving effect to this offering: | \$ 0.40 |
| Dilution per share to investors participating in this offering upon common stock warrant exercise: | \$ 2.85 |

The above discussion and table are based on 12,747,964 shares of our common stock outstanding as of September 30, 2010 as adjusted for the 2,083,333 shares underlying common stock warrants issued in this offering and their assumed immediate exercise at the initial exercise price of those warrants. This excludes the effect of up to 2,083,333 shares of common stock issuable upon conversion of the preferred stock offered in this offering at the initial conversion price per share. It also excludes, as of September 30, 2010:

- up to 2,082,646 shares of common stock that may be issued upon the exercise of outstanding options pursuant to our stock option plans at a weighted-average exercise price of \$3.78 per share;
- up to 77,400 shares of common stock issuable upon the vesting of outstanding restricted stock awards; and

- up to 1,009,076 shares of common stock issuable upon the exercise of other outstanding warrants at a weighted-average exercise price of \$5.24 per share.

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PLAN OF DISTRIBUTION

We are offering the units through a placement agent. Subject to the terms and conditions contained in the placement agency agreement, dated January 3, 2011, Dominick & Dominick LLC has agreed to act as the placement agent for the sale of up to 5,000 units. The placement agent is not purchasing or selling any units by this prospectus supplement or the accompanying prospectus nor is it required to arrange for the purchase or sale of any specific number or dollar amount of units, but has agreed to use its commercially reasonable best efforts to arrange for the sale of all units offered by us to the investors.

We will sell the offered units to selected institutional and other investors under a securities purchase agreement entered into between us and each of the investors at the offering price stated on the cover of this prospectus supplement. Certain of our directors and officers and certain affiliates of the placement agent will participate in the offering as investors on the same terms and conditions as all other investors who are party to the securities purchase agreement. We currently anticipate that closing of the sale of units offered hereby will take place on or about January 14, 2011. Investors will also be informed of the date and manner in which they must transmit the purchase price for their units.

On the scheduled closing date, the following will occur:

- we will receive funds in the amount of the aggregate purchase price for the units we sell;
- we will deliver to each of the investors certificates evidencing ownership of the shares of preferred stock and the warrants being purchased; and
- Dominick & Dominick LLC will receive the placement agent's fee in accordance with the terms of the placement agency agreement.

In accordance with the terms of the placement agency agreement, we will pay the placement agent an aggregate commission equal to 7% of the gross proceeds of the sale of units in the offering. If we receive aggregate gross proceeds of at least \$3,800,000 from the sale of units in this offering, then the placement agent shall be entitled to a performance incentive bonus which is only payable upon demand of the placement agent, which demand may be made in whole or in part any time from May 1, 2011 through October 31, 2012. The performance incentive bonus shall be paid in cash in an amount equal to 7% of the gross proceeds of the offering divided by the closing bid price of our common stock immediately preceding the date that the placement agent delivers a demand for payment of the performance bonus incentive to us, provided, however, that the maximum performance incentive bonus payable by us in any fiscal quarter shall not exceed \$500,000; the excess, if any, will be paid over the ensuing eighteen (18) months. We may, in our sole discretion, elect to satisfy our future, contingent obligation to pay the performance incentive bonus in full at closing by issuing to the placement agent at closing warrants to purchase that number of shares of our 8% Series A Redeemable Convertible Preferred Stock equal to 7% of the total number of Series A preferred shares issued to investors at closing at an exercise price of \$1,000 per share and on terms substantially the same as that which is issued to investors at closing. We also have agreed to reimburse the placement agent for certain fees and legal expenses incurred by it in connection with the offering. In no event will the total amount of compensation paid to the placement agent and other securities brokers and dealers upon completion of this offering exceed 8% of the gross proceeds of the offering. The estimated offering expenses payable by us, in addition to the placement agent's fee of \$350,000 (excluding the performance incentive bonus), are approximately \$300,000, which includes legal, accounting and printing costs and various other fees associated with registering the preferred stock and the warrants and listing the common stock underlying the preferred stock and the warrants. After deducting certain fees due to the placement agent and our estimated offering expenses, we expect the net proceeds from this offering to

be approximately \$4.35 million.

In connection with any subsequent sale of securities during the twelve month period following the closing of this offering, the placement agency agreement also entitles the placement agent to receive 7% of the gross proceeds received by us from persons who also were investors in this offering or who proffered to us executed subscription documents in this offering. The placement agent has informed us that it will not engage in over-allotment, stabilizing transactions or syndicate covering transactions in connection with the offering. The placement agent may, from time to time, engage in transactions with and perform services for us in the ordinary course of its business.

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We have agreed to indemnify the placement agent against certain liabilities, including liabilities under the Securities Act and liabilities arising from breaches of representations and warranties contained in the placement agency agreement. We have also agreed to contribute to payments the placement agent may be required to make in respect of such liabilities.

Prior to our engagement of Dominick & Dominick, we engaged two other investment banking firms as co-manager or co-agents for an offering of our securities, subject to certain conditions and limitations. That transaction was terminated in mid-December 2010. We do not believe that the issuance and sale of the Preferred Stock and Warrants in this offering to the select institutional investors whom we and Dominick and Dominick have identified is subject to the terms of those prior investment banking agreements. There can be no assurance, however, that one or both of the prior investment banking firms will not bring an action seeking to enforce the compensatory terms of those agreements for seven percent (7%) of the gross proceeds of this offering, or approximately \$350,000 in the aggregate. We have agreed to indemnify the placement agent and the investors in this offering against any liabilities arising from any such claims.

The placement agency agreement is included as an exhibit to our Current Report on Form 8-K that we will file with the SEC in connection with the consummation of this offering.

We are acting as our own registrar, transfer agent, paying agent and conversion agent with respect to the shares of preferred stock and warrants to be issued in this offering. The registrar and transfer agent for our common stock is American Stock Transfer & Trust Company located at 6201 15th Avenue, 2nd Floor, Brooklyn, NY 11219. Its phone number is 800-937-5449.

Our common stock is traded on the NASDAQ Capital Market under the symbol "CLSN."

LEGAL MATTERS

Seyfarth Shaw LLP, New York, New York is passing upon the validity of the common stock being offered hereby. Anslow + Jaclyn LLP is acting as counsel for the investors in this offering.

EXPERTS

The financial statements incorporated in this prospectus supplement by reference to the Annual Report on Form 10-K for the year ended December 31, 2009 have been so incorporated in reliance on the report of Stegman & Company, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND MORE INFORMATION

Federal securities laws require us to file information with the SEC concerning our business and operations. Accordingly, we file annual, quarterly and current reports, proxy statements and other information with the SEC. You may read and copy any document we file at the SEC's public reference rooms, including those located at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on public reference rooms. Our SEC filings are also available to the public from the SEC's web site at <http://www.sec.gov>.

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INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC allows us to “incorporate by reference” certain information we file with them in this prospectus supplement. This means that we can disclose important information to you by referring you to the other information we have filed with the SEC. The information that we incorporate by reference is considered to be part of this prospectus supplement. Information that we file later with the SEC will automatically update and supersede this information. Further, all filings we make under the Exchange prior to the termination of the offering shall be deemed to be incorporated by reference into this prospectus supplement. The following documents filed by us with the SEC and any future filings under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act (File No. 001-15911) made prior to the termination of this offering are incorporated by reference:

- our Annual Report on Form 10-K for the fiscal year ended December 31, 2009 (including information specifically incorporated by reference into our Form 10-K from our definitive proxy statement on Schedule 14A relating to our annual meeting of stockholders held on June 25, 2010), as filed with the SEC on March 17, 2010;
- our Quarterly Reports on Form 10-Q for the fiscal quarters ended March 31, 2010, June 30, 2010 and September 30, 2010, as filed with the SEC on May 4, 2010, August 5, 2010 and November 15, 2010, respectively;
- our Current Reports on Form 8-K as filed with the SEC on January 8, 2010, June 18, 2010, June 29, 2010, July 9, 2010, August 2, 2010, December 1, 2010 and December 8, 2010;
- our definitive proxy statement on Schedule 14A, relating to our annual meeting of stockholders held on June 25, 2010, as filed with the SEC on April 30, 2010; and
- the description of our common stock contained in our registration statement on Form 8-A, as filed with the SEC on May 26, 2000, as amended by a Form 8-A/A dated February 7, 2008, and any amendments or reports filed for the purpose of updating such description.

This prospectus supplement may contain information that updates, modifies or is contrary to information in one or more of the documents incorporated by reference in this prospectus supplement. Reports we file with the SEC after the date of this prospectus supplement may also contain information that updates, modifies or is contrary to information in this prospectus supplement or in documents incorporated by reference in this prospectus supplement. Investors should review these reports as they may disclose a change in our business, prospectus, financial condition or other affairs after the date of this prospectus supplement.

Our website is www.celsion.com. Our website contains links to our filings available on the SEC website. We will also provide electronic or paper copies of our filings free of charge upon written or oral request. The information available on or through our websites is not a part of this prospectus supplement and should not be relied upon. You can request a free copy of the above filings or any filings subsequently incorporated by reference into this prospectus supplement by writing or calling us at:

Celsion Corporation
10220-L Old Columbia Road
Columbia, Maryland 21046-2364
Attention: Jeffrey W. Church, Vice President
and Chief Financial Officer
(410) 290-5390

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PROSPECTUS

CELSION CORPORATION
\$50,000,000
Common Stock
Preferred Stock
Warrants
Rights
Units

From time to time, we may offer up to \$50,000,000, in one or more series, any combination of the following securities of our company:

- common stock;
- preferred stock;
- warrants to purchase shares of common stock or preferred stock;
- rights to purchase shares of common stock or preferred stock; or
- units comprised of 2 or more of the foregoing securities.

We will provide the specific terms of these offerings and securities in one or more supplements to this prospectus. We may also authorize one or more free writing prospectuses to be provided to you in connection with these offerings. The prospectus supplement and any related free writing prospectus may also add, update or change information contained in this prospectus. You should carefully read this prospectus, the applicable prospectus supplement and any related free writing prospectus, as well as any documents incorporated by reference, before buying any of the securities being offered.

Our common stock is traded on the NASDAQ Global Market under the symbol "CLSN." The applicable prospectus supplement will contain information, where applicable, as to any other listing, if any, on the NASDAQ Global Market or any securities market or other exchange of the securities covered by the applicable prospectus supplement.

Investing in our securities involves a high degree of risk. You should review carefully the risks and uncertainties described under the heading "Risk Factors" on page 4 of this Prospectus, in any applicable prospectus supplement and in any related free writing prospectus, and under similar headings in the other documents that are incorporated by reference into this prospectus.

This prospectus may not be used to consummate a sale of any securities unless accompanied by a prospectus supplement.

The securities may be sold directly by us to investors, through agents designated from time to time or to or through underwriters or dealers, on a continuous or delayed basis. For additional information on the methods of sale, you should refer to the section entitled "Plan of Distribution" in this prospectus. If any agents or underwriters are involved in the sale of any securities with respect to which this prospectus is being delivered, the names of such agents or

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underwriters and any applicable fees, commissions, discounts and over-allotment options will be set forth in a prospectus supplement. The price to the public of such securities and the net proceeds that we expect to receive from such sale will also be set forth in a prospectus supplement.

The aggregate market value of our outstanding common equity held by non-affiliates as of March 24, 2009 was approximately \$29.3 million. We have not issued any securities pursuant to Instruction I.B.6. of Form S-3 during the 12 calendar month period that ends on and includes the date hereof.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus is April 17, 2009

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission (the “SEC”) utilizing a “shelf” registration process. Under this shelf registration process, we may offer shares of our common stock and preferred stock, and warrants and/or rights to purchase shares of our common or preferred stock, either individually or in units, in one or more offerings, up to a total dollar amount of \$50,000,000. This prospectus provides you with a general description of the securities we may offer. Each time we offer a type or series of securities under this prospectus, we will provide a prospectus supplement that will contain more specific information about the terms of those securities. We may also authorize one or more free writing prospectuses to be provided to you that may contain material information relating to these offerings. We may also add, update or change in the prospectus supplement (and in any related free writing prospectus that we may authorize to be provided to you) any of the information contained in this prospectus or in the documents that we have incorporated by reference into this prospectus. We urge you to carefully read this prospectus, any applicable prospectus supplement and any related free writing prospectus, together with the information incorporated herein by reference as described under the section entitled “Where You Can Find Additional Information,” in this prospectus before buying any of the securities being offered. **THIS PROSPECTUS MAY NOT BE USED TO CONSUMMATE A SALE OF SECURITIES UNLESS IT IS ACCOMPANIED BY A PROSPECTUS SUPPLEMENT.**

You should rely only on the information that we have provided or incorporated by reference in this prospectus, any applicable prospectus supplement and any related free writing prospectus that we may authorize to be provided to you. We have not authorized anyone to provide you with different information. No dealer, salesperson or other person is authorized to give any information or to represent anything not contained in this prospectus, any applicable prospectus supplement or any related free writing prospectus that we may authorize to be provided to you. You must not rely on any unauthorized information or representation. This prospectus is an offer to sell only the securities offered hereby, and only under circumstances and in jurisdictions where it is lawful to do so. You should assume that the information in this prospectus, any applicable prospectus supplement or any related free writing prospectus is accurate only as of the date on the front of the document and that any information we have incorporated by reference is accurate only as of the date of the document incorporated by reference, regardless of the time of delivery of this prospectus, any applicable prospectus supplement or any related free writing prospectus, or any sale of a security.

This prospectus contains summaries of certain provisions contained in some of the documents described herein, but reference is made to the actual documents for complete information. All of the summaries are qualified in their entirety by the actual documents. Copies of some of the documents referred to herein have been filed, will be filed or will be incorporated by reference as exhibits to the registration statement of which this prospectus is a part, and you may obtain copies of those documents as described below under the section entitled “Where You Can Find Additional Information” in this prospectus.

We obtained statistical data, market data and other industry data and forecasts used throughout, or incorporated by reference in, this prospectus from market research, publicly available information and industry publications. Industry publications generally state that they obtain their information from sources that they believe to be reliable, but they do not guarantee the accuracy and completeness of the information. Similarly, while we believe that the statistical data, industry data and forecasts and market research are reliable, we have not independently verified the data, and we do not make any representation as to the accuracy of the information. We have not sought the consent of the sources to refer to their reports appearing or incorporated by reference in this prospectus.

This prospectus and the information incorporated herein by reference includes trademarks, service marks and trade names owned by us or other companies. All trademarks, service marks and trade names included or incorporated by

reference into this prospectus, any applicable prospectus supplement or any related free writing prospectus are the property of their respective owners.

Unless otherwise mentioned or unless the context requires otherwise, all references in this prospectus to “Celsion,” “we,” “our” or similar references mean Celsion Corporation.

PROSPECTUS SUMMARY

The following summary highlights selected information contained or incorporated by reference in this prospectus. This summary does not contain all of the information you should consider before investing in the securities. Before making an investment decision, you should read the entire prospectus and any supplement hereto carefully, including the risk factors section as well as the financial statements and the notes to the financial statements incorporated herein by reference.

Our Company

Celsion Corporation (“Celsion” or the “Company” or “we”) is an innovative oncology drug development company focused on improving treatment for those suffering with highly aggressive and difficult to treat forms of cancer. We are working to develop and commercialize more efficient, effective, targeted chemotherapeutic oncology drugs based on our proprietary heat-activated liposomal technology. The promise of this drug technology is to maximize efficacy while minimizing side-effects common to cancer treatments.

Our lead product ThermoDox® is being evaluated in a Phase III clinical trial for primary liver cancer and a Phase II study for recurrent chest wall breast cancer. ThermoDox® is a liposomal encapsulation of doxorubicin, an approved and frequently used oncology drug for the treatment of a wide range of cancers. Localized mild hyperthermia (40-42 degrees Celsius) releases the entrapped doxorubicin from the liposome enabling high concentrations of doxorubicin to be deposited preferentially in a targeted tumor.

Celsion is also developing a product pipeline of cancer drugs that employ its heat activated liposomal technology. We are developing a liposomal formulation of docetaxel and plan to develop a number of other liposomal formulations for existing chemotherapeutic cancer drugs where we believe that our technology can improve efficacy and safety. We have formed a joint research agreement with Royal Phillips Electronics that is evaluating the combination of Phillips’ high intensity focused ultrasound with Celsion’s heat activated liposomal technology to develop new cancer drugs.

For certain indications, the Company may seek licensing partners to share in the development and commercialization costs. The Company will also evaluate licensing cancer products from third parties for cancer treatments to expand its development pipeline.

In December 2008, the Company entered into a licensing agreement with Yakult Honsha under which Yakult was granted the exclusive right to commercialize and market ThermoDox® for the Japanese market. Celsion was paid a \$2.5 million up-front licensing fee and Celsion has the potential to receive an additional \$18 million upon receipt of marketing approval by the Japanese Ministry of Health, Labor and Welfare. Celsion also has the potential to receive additional milestone payments tied to the achievement of certain levels of sales and approval for new indications. Celsion will receive double digit escalating royalties on the sale of ThermoDox® in Japan, if and when any such sales occur. Celsion also will be the exclusive supplier of ThermoDox® to Yakult.

In 2005, the Company made a strategic decision to divest its medical device business. The Company sold this business to Boston Scientific Corporation (“Boston Scientific”) for \$60 million. In 2008, the Company collected a \$15 million installment payment from the sale of these assets and is due to receive the final \$15 million installment payment in June 2009. The results of operations for the medical device business for the year ended December 31, 2007 has been reclassified as a discontinued operation.

Our Executive Offices

Our principal executive offices are located at 10220-L Old Columbia Road, Columbia, Maryland 21046. Our telephone number is (410) 290-5390.

The Securities We May Offer

We may offer shares of our common stock and preferred stock, and warrants and/or rights to purchase shares of our common stock and preferred stock, either individually or in units, with a total value of up to \$50,000,000 from time to time under this prospectus at prices and on terms to be determined by market conditions at

the time of any offering. This prospectus provides you with a general description of the securities we may offer. Each time we offer a type or series of securities under this prospectus, we will provide a prospectus supplement that will describe the specific amounts, prices and other important terms of the securities, including, to the extent applicable:

- designation or classification;
- aggregate offering price;
- rates and times of payment of dividends, if any;
- redemption, conversion, exercise, exchange or sinking fund terms, if any;
 - ranking;
 - restrictive covenants, if any;
 - voting or other rights, if any;
 - conversion prices, if any; and
- important United States federal income tax considerations.

The prospectus supplement and any related free writing prospectus that we may authorize to be provided to you may also add, update or change information contained in this prospectus or in documents we have incorporated by reference. However, no prospectus supplement or free writing prospectus will offer a security that is not registered and described in this prospectus at the time of the effectiveness of the registration statement of which this prospectus is a part.

THIS PROSPECTUS MAY NOT BE USED TO CONSUMMATE A SALE OF SECURITIES UNLESS IT IS ACCOMPANIED BY A PROSPECTUS SUPPLEMENT.

We may sell the securities directly to investors or to or through agents, underwriters or dealers. We, and our agents or underwriters, reserve the right to accept or reject all or part of any proposed purchase of securities. If we do offer securities to or through agents or underwriters, we will include in the applicable prospectus supplement:

- the names of those agents or underwriters;
- applicable fees, discounts and commissions to be paid to them;
- details regarding over-allotment options, if any; and
- the net proceeds to us.

Common Stock. We may issue shares of our common stock from time to time. The holders of our common stock are entitled to one vote for each share held of record on all matters submitted to a vote of stockholders and do not have cumulative voting rights. Subject to preferences that may be applicable to any outstanding shares of preferred stock, the holders of our common stock are entitled to receive ratably such dividends as may be declared by our board of

directors out of legally available funds. Upon our liquidation, dissolution or winding up, holders of our common stock are entitled to share ratably in all assets remaining after payment of liabilities and the liquidation preferences of any then outstanding shares of preferred stock.

Preferred Stock. We may issue shares of our preferred stock from time to time, in one or more series. Our board of directors will determine designations, powers (including voting), privileges, preferences and relative

participating, optional or other rights, if any, of the shares of each such series and the qualifications, limitations or restrictions thereof, including dividend rights, conversion rights, preemptive rights, terms of redemption or repurchase, liquidation preferences, sinking fund terms and the number of shares constituting any series or the designation of any series. Convertible preferred stock will be convertible into our common stock or exchangeable for our other securities. Conversion may be mandatory or at the holder's option and would be at prescribed conversion rates.

If we sell any series of preferred stock under this prospectus, we will fix the designations, powers (including voting), privileges, preferences and relative participating, optional or other rights, if any, of the shares of each such series and the qualifications, limitations or restrictions thereof, in the certificate of designation relating to that series. We will file as an exhibit to the registration statement of which this prospectus is a part, or will incorporate by reference from reports that we file with the SEC, the form of any certificate of designation that describes the terms of the series of preferred stock that we are offering before the issuance of the related series of preferred stock. We urge you to read the applicable prospectus supplement (and any free writing prospectus that we may authorize to be provided to you) related to the series of preferred stock being offered, as well as the complete certificate of designation that contains the terms of the applicable series of preferred stock.

Warrants. We may issue warrants for the purchase of our common stock or preferred stock, in one or more series. We may issue warrants independently or together with common stock or preferred stock, and the warrants may be attached to or separate from these securities. The warrants will be evidenced by warrant certificates issued under one or more warrant agreements, which are contracts between us and an agent for the holders of the warrants. In this prospectus, we have summarized certain general features of the warrants. We will file as an exhibit to the registration statement of which this prospectus is a part, or will incorporate by reference into the registration statement of which this prospectus is a part, the form of warrant agreement, including a form of warrant certificate, that describes the terms of the series of warrants we are offering before the issuance of the related series of warrants. We urge you to read the prospectus supplement (and any free writing prospectus that we may authorize to be provided to you) related to the series of warrants being offered, as well as the complete warrant agreements and warrant certificates that contain the terms of the applicable series of warrants.

Rights. We may issue rights to purchase our common stock or preferred stock, in one or more series. We may issue rights independently or together with other securities, and the rights may be attached or separate from these securities. In this prospectus, we have summarized certain general features of the rights. We urge you, however, to read the applicable prospectus supplement (and any free writing prospectus that we may authorize to be provided to you) related to the particular series of rights being offered, as well as any agreements that describe the terms of the rights we are offering before the issuance of the related rights.

Units. We may issue, in one or more series, units consisting of our common stock, preferred stock, and/or rights and/or warrants for the purchase of our common stock or preferred stock in any combination. Each series of units will be evidenced by unit certificates that we will issue, and units may be issued under a unit agreement that we enter into with a unit agent. In this prospectus, we have summarized certain general features of the units. We will file as exhibits to the registration statement of which this prospectus is a part, or will incorporate by reference from reports that we file with the SEC, the form of unit agreement and any supplemental agreements, including a form of unit certificate, that describe the terms of the series of units we are offering before the issuance of the related series of units. We urge you, however, to read the applicable prospectus supplement (and any free writing prospectus that we may authorize to be provided to you) related to the series of units being offered, as well as the complete unit agreement that contains the terms of the units.

RISK FACTORS

Investing in our securities involves a high degree of risk. You should carefully review the risks and uncertainties described under the heading “Risk Factors” contained in the applicable prospectus supplement and any related free writing prospectus, and under the same and similar headings in the other documents that are incorporated by reference into this prospectus. Additional risks not presently known to us or that we currently believe are immaterial may also significantly impair our business operations.

FORWARD-LOOKING STATEMENTS

Certain statements contained or incorporated by reference in this prospectus, in any applicable prospectus supplement and in any related free writing prospectus, constitute forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 and releases issued by the Securities and Exchange Commission and within the meaning of Section 27A of the Securities Act of 1933, as amended (the “Securities Act”), and Section 21E of the Securities Exchange Act of 1934, as amended. In addition, from time to time we may publish forward-looking statements relating to such matters as anticipated financial performance, business prospects, technological developments, new products, research and development activities and other aspects of our present and future business operations and similar matters that also constitute such forward-looking statements. These statements involve known and unknown risks, uncertainties, and other factors that may cause our or our industry’s actual results, levels of activity, performance, or achievements to be materially different from any future results, levels of activity, performance, or achievements expressed or implied by such forward-looking statements. Such factors include, among other things:

- unforeseen changes in the course of research and development activities and in clinical trials;
- possible changes in cost and timing of development and testing, capital structure, and other financial items;
 - changes in approaches to medical treatment;
 - introduction of new products by others;
 - possible acquisitions of other technologies, assets or businesses;
- possible actions by customers, suppliers, strategic partners, potential strategic partners, competitors and regulatory authorities; and
- those listed under the header “Risk Factors” contained in the applicable prospectus supplement and any related free writing prospectus, and under the same and similar headings in the other documents that are incorporated by reference into this prospectus.

In some cases, you can identify forward-looking statements by terminology such as “expect”, “anticipate”, “estimate”, “plan”, “believe”, “could”, “intend”, “predict”, “may”, “will”, “should”, “will” and words of similar import regarding the Company’s expectations. Forward-looking statements are only predictions and actual events or results may differ materially. Although we believe that our expectations are based on reasonable assumptions within the bounds of our current knowledge of our industry, business and operations, we cannot guarantee that actual results will not differ materially from our expectations. In evaluating such forward-looking statements, you should specifically consider various factors, including the risks outlined under the heading “Risk Factors” contained in the applicable prospectus supplement and any related free writing prospectus, and in our most recent annual report on Form 10-K and in our most recent quarterly report on Form 10-Q, as well as any amendments thereto reflected in subsequent filings with the SEC. The discussion of risks and uncertainties set forth in those filings is not necessarily a complete or exhaustive list of all risks facing the Company at any particular point in time. We operate in a highly competitive, highly regulated and rapidly changing environment, and our business is in a state of evolution. Therefore, it is likely that new risks will emerge, and that the nature and elements of existing risks will change, over time. It is not possible for management to predict all such risk factors or changes therein, or to assess either the impact of all such risk factors on our business or the extent to which any individual risk factor, combination of factors, or new or altered factors, may cause results to differ

materially from those contained in any forward-looking statement. Also, these forward-looking statements represent our estimates and assumptions only as of the date such forward-looking statements are made. You should carefully read this prospectus, the applicable prospectus supplement and any related free writing prospectus, together with the information incorporated herein by reference as described under the section entitled “Where You Can Find Additional Information,” and with the understanding that our actual future results may be materially different from what we expect.

Except as required by law, forward-looking statements speak only as of the date they are made, and we assume no obligation to update any forward-looking statements publicly, or to update the reasons why actual results could differ materially from those anticipated in any forward-looking statements, even if new information becomes available.

USE OF PROCEEDS

We currently intend to use the net proceeds from the sale of the securities offered hereby for general corporate purposes, which may include the further development, manufacture and commercialization of our lead product candidate, ThermoDox®, and to fund research and development of other products, working capital, capital expenditures and other general corporate purposes. We may also use a portion of the net proceeds to acquire or invest in businesses, products and technologies that are complementary to our own, as well as for capital expenditures. We have not specifically allocated the proceeds to those purposes as of the date of this prospectus. Pending these uses, we expect to invest the net proceeds in short-term, investment-grade securities. The precise amount and timing of the application of proceeds from the sale of securities will depend on our funding requirements and the availability and cost of other funds at the time of sale. Allocation of proceeds of a particular series of securities, or the principal reason for the offering if no allocation has been made, will be described in the applicable prospectus supplement or in any related free writing prospectus.

DESCRIPTION OF CAPITAL STOCK

General

Our authorized capital stock consists of 250,000,000 shares of common stock, \$0.01 par value per share, and 100,000 shares of preferred stock, \$0.01 par value per share, of which 15,000 shares of Series C Junior Participating Preferred Stock were reserved for issuance under the Stockholder Rights Plan (described below). As of March 31, 2009, there were 10,156,350 shares of our common stock outstanding and no shares of preferred stock outstanding.

The following summary description of our capital stock is based on the applicable provisions of the Delaware General Corporation Law (the “DGCL”) and on the provisions of our certificate of incorporation, as amended (our “Certificate of Incorporation”), and our bylaws, as amended (our “Bylaws”). This information is qualified entirely by reference to the applicable provisions of the DGCL and our Certificate of Incorporation and Bylaws. For information on how to obtain copies of our Certificate of Incorporation and Bylaws, which are exhibits to the registration statement of which this prospectus is a part, see the section entitled “Where You Can Find Additional Information” in this prospectus.

Common Stock

Holders of common stock to be registered hereunder are entitled to one vote for each share held of record on all matters submitted to a vote of stockholders and do not have cumulative voting rights. Subject to any preferential rights of any outstanding preferred stock, holders of common stock are entitled to receive ratably such dividends, if any, as may be declared from time to time by the Board of Directors of the Company (the “Board”) out of funds legally available therefor. In the event of a dissolution, liquidation or winding-up of the Company, holders of common stock are entitled to share ratably in all assets remaining after payment of liabilities and any preferential rights of any outstanding preferred stock.

Holders of common stock have no preemptive or conversion rights or other subscription rights. There are no redemption or sinking fund provisions applicable to the common stock. All outstanding shares of common stock are fully paid and non-assessable. The rights, preferences and privileges of the holders of common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of preferred stock which may be designated and issued in the future.

The Board is classified into three classes, designated as Class I, Class II and Class III, with each class to be elected for three year terms on a staggered basis. At each annual meeting of stockholders, the directors elected to succeed those whose terms are expiring succeed to the same class as the directors they replace and each such new director is elected for a term to expire at the third annual meeting of stockholders after his or her election and when his or her successor is duly elected and qualified.

Holders of common stock have rights under the Rights Agreement described below under the caption “Anti-Takeover Considerations and Special Provisions of Our Certificate of Incorporation, Our Bylaws and the Delaware General Corporation Law - Stockholder Rights Plan”.

Preferred Stock

Pursuant to our Certificate of Incorporation, our Board has the authority, without further action by the stockholders (unless such stockholder action is required by applicable law or NASDAQ rules), to designate and issue shares of preferred stock in one or more series, to establish from time to time the number of shares to be included in each such

series, to fix the designations, powers (including voting), privileges, preferences and relative participating, optional or other rights, if any, of the shares of each such series and the qualifications, limitations or restrictions thereof, and to increase or decrease the number of shares of any such series, but not below the number of shares of such series then outstanding.

We will fix the designations, powers (including voting), privileges, preferences and relative participating, optional or other rights, if any, of the preferred stock of each series, as well as the qualifications, limitations or restrictions thereof, in the certificate of designation relating to that series. We will file as an exhibit to the registration statement of which this prospectus is a part, or will incorporate by reference from reports that we file

with the SEC, the form of any certificate of designation that describes the terms of the series of preferred stock we are offering before the issuance of that series of preferred stock. This description will include:

- the title and stated value;
- the number of shares we are offering;
- the liquidation preference per share;
- the purchase price;
- the dividend rate, period and payment date and method of calculation for dividends;
- whether dividends will be cumulative or non-cumulative and, if cumulative, the date from which dividends will accumulate;
 - the procedures for any auction or remarketing, if any;
 - the provisions for a sinking fund, if any;
- the provisions for redemption or repurchase, if applicable, and any restrictions on our ability to exercise those redemption and repurchase rights;
 - any listing of the preferred stock on any securities exchange or market;
- whether the preferred stock will be convertible into or exchangeable for other securities, and, if applicable, the conversion price, or how it will be calculated, and the conversion period;
 - voting rights, if any, of the preferred stock;
 - preemptive rights, if any;
 - restrictions on transfer, sale or other assignment, if any;
 - liability as to further calls or to assessment by the Company, if any;
- a discussion of any material United States federal income tax considerations applicable to the preferred stock;
- the relative ranking and preferences of the preferred stock as to dividend rights and rights if we liquidate, dissolve or wind up our affairs;
- any limitations on the issuance of any class or series of preferred stock ranking senior to or on a parity with the series of preferred stock as to dividend rights and rights if we liquidate, dissolve or wind up our affairs; and
 - any other specific terms, preferences, rights or limitations of, or restrictions on, the preferred stock.

The DGCL provides that the holders of preferred stock will have the right to vote separately as a class (or, in some cases, as a series) on an amendment to our Certificate of Incorporation if the amendment would change the par value or, unless the Certificate of Incorporation provided otherwise, the number of authorized shares of the class or change the powers, preferences or special rights of the class or series so as to adversely affect the class or series, as the case may be. This right is in addition to any voting rights that may be provided for in the applicable certificate of designation.

Our Board may authorize the issuance of preferred stock with voting or conversion rights that could adversely affect the voting power or other rights of the holders of our common stock or other securities. Preferred stock could be issued quickly with terms designed to delay or prevent a change in control of our company or make removal of management more difficult. Additionally, the issuance of preferred stock may have the effect of decreasing the market price of our common stock.

Anti-Takeover Considerations and Special Provisions of Our Certificate of Incorporation, Our Bylaws and the Delaware General Corporation Law

Stockholder Rights Plan

On August 6, 2002, our Board declared a dividend distribution of one preferred share purchase right (a "Purchase Right") for each outstanding share of our common stock. The dividend was payable to the stockholders of record on August 6, 2002 (the "Record Date"), and with respect to shares of common stock issued thereafter until the Distribution Date (as defined below) and, in certain circumstances, with respect to shares of common stock issued after the Distribution Date. Except as set forth below, when it becomes exercisable, each Purchase Right entitles the registered holder to purchase from the Company one ten-thousandth (1/10,000) of a share of Series C Junior Participating Preferred Stock, par value \$0.01 per share, of the Company (the "Series C Preferred Stock"), at a price of \$66.90 per one ten-thousandth (1/10,000) of a share of Series C Preferred Stock (the "Purchase Price"), subject to adjustment. The description and terms of the Purchase Rights are set forth in a Rights Agreement between the Company and American

Transfer & Trust Company, as rights agent, dated as of August 15, 2002 (the "Effective Date"), as amended on January 16, 2003 (collectively, the "Rights Agreement").

Initially, the Purchase Rights will be attached to all certificates representing shares of common stock outstanding as of the Record Date, and no separate certificates representing the Purchase Rights ("Right Certificates") will be distributed. The Purchase Rights will separate from the common stock upon the earlier to occur of (A) a person or group of affiliated or associated persons having acquired beneficial ownership of fifteen percent (15%) or more of the outstanding shares of common stock or (B) ten (10) days (or such later date as the Board may determine) after the commencement of, or announcement of an intention to make, a tender offer or exchange offer the completion of which would result in a person or group of affiliated or associated persons becoming an Acquiring Person (as defined below) (in either case, the "Distribution Date"). A person or group whose acquisition of shares of common stock cause a distribution date pursuant to clause (A) above is an "Acquiring Person," with certain exceptions set forth in the Rights Agreement. The date on which a person or group is first publicly announced to have become such by the Company or such Acquiring Person or an earlier date on which a majority of the then-sitting members of the Board becomes aware of the existence of such Acquiring Person is referred to below and in the Rights Agreement as the "Stock Acquisition Date".

If any person becomes an Acquiring Person, each holder of a Purchase Right will thereafter have the right (the "Flip-In Right") to receive, upon exercise, the number of shares of common stock (or, in certain circumstances, one ten-thousandth (1/10,000) of a share of Series C Preferred Stock) or other securities of the Company having a value (immediately before such triggering event) equal to two (2) times the exercise price of the Purchase Right. Notwithstanding the foregoing, after the Flip-In Right is triggered as described above, all Purchase Rights that are, or (under certain circumstances specified in the Rights Agreement) were, beneficially owned by any Acquiring Person or any affiliate or associate thereof will be null and void. The Board has the option, at any time after any person becomes an Acquiring Person but before an Acquiring Person becomes the beneficial owner of fifty percent (50%) or more of

the Common Stock, to exchange all or part of the then-exercisable Purchase Rights (excluding those that have become void, as described in the immediately preceding sentence) for shares of common stock, at a one-to-one exchange ratio, appropriately adjusted to reflect any stock split, stock dividend or similar transaction having occurred since the Effective Date.

If, at any time after the Stock Acquisition Date, (A) the Company consolidates or merges with another person, (B) any Person merges with and into the Company, with the Company being the surviving corporation and, in connection with such merger, all or part of the common stock is changed into or exchanged for stock or other securities of any other Person (or of the Company) or cash or any other property, or (C) the Company sells or otherwise transfers, in one or more transactions, assets or earning power aggregating fifty percent (50%) or more of its consolidated assets or earning power to any other Person, then each holder of a Purchase Right (except Purchase

Rights which previously have been voided as set forth above) shall thereafter have the right (the “Flip-Over Right”) to receive, upon exercise, common shares of the acquiring company (or, in certain circumstances, its parent), having a value equal to two times the exercise price of the Purchase Right. The holder of a Right will continue to have the Flip-Over Right whether or not such holder exercises or surrenders the Flip-In Right.

Series C Preferred Stock purchasable upon exercise of the Purchase Rights will not be redeemable. Each share of Series C Preferred Stock will be entitled to ten thousand (10,000) votes per share (subject to customary antidilution provisions) on matters submitted to a vote of the shareholders. Each share of Series C Preferred Stock will be entitled to a minimum preferential quarterly dividend payment of \$100 per share but, if greater, will be entitled to a total dividend per share of ten thousand (10,000) times the dividend declared per share of common stock. In the event of liquidation, the holders of shares of the Series C Preferred Stock will be entitled to a minimum preferential liquidation payment per share in an amount equal to the greater of \$66.90 or ten thousand (10,000) times the payment made per share of common stock plus an amount equal to accrued and unpaid dividends and distributions thereon, whether or not declared, to the date of such payment. Finally, in the event of any merger, consolidation or other transaction in which shares of common stock are exchanged, each share of Series C Preferred Stock will be entitled to receive ten thousand (10,000) times the amount received per share of common stock. These rights are protected by customary antidilution provisions.

At any time before the earlier to occur of (A) a person becoming an Acquiring Person or (B) the expiration of the Rights, and under certain other circumstances, the Company may redeem the Purchase Rights in whole, but not in part, at a price of \$0.01 per Purchase Right (the “Redemption Price”). The Purchase Rights are not exercisable until the Distribution Date and will expire on August 15, 2012, unless earlier redeemed.

Certificate of Incorporation and Bylaws

A number of provisions of our Certificate of Incorporation and our Bylaws concern matters of corporate governance and the rights of our stockholders. Provisions that grant our Board the ability to issue shares of preferred stock and to set the voting rights, preferences and other terms thereof may discourage takeover attempts that are not first approved by our Board, including takeovers that may be considered by some stockholders to be in their best interests, such as those attempts that might result in a premium over the market price for the shares held by stockholders. Certain provisions could delay or impede the removal of incumbent directors even if such removal would be beneficial to our stockholders, such as the classification of our Board and the lack of cumulative voting. Since our board of directors has the power to retain and discharge our officers, these provisions could also make it more difficult for existing stockholders or another party to effect a change in management.

These provisions may have the effect of deterring hostile takeovers or delaying changes in our control or in our management. These provisions are intended to enhance the likelihood of continued stability in the composition of our board of directors and in the policies they implement, and to discourage certain types of transactions that may involve an actual or threatened change of our control. These provisions are designed to reduce our vulnerability to an unsolicited acquisition proposal. The provisions also are intended to discourage certain tactics that may be used in proxy fights. However, such provisions could have the effect of discouraging others from making tender offers for our shares and, as a consequence, they also may inhibit fluctuations in the market price of our shares that could result from actual or rumored takeover attempts.

These provisions also could discourage or make more difficult a merger, tender offer or proxy contest, even if they could be favorable to the interests of stockholders, and could potentially depress the market price of our common stock. Our Board believes that these provisions are appropriate to protect our interests and the interests of our

stockholders.

Classification of Board and No Cumulative Voting. Our Certificate of Incorporation and Bylaws provide for our Board to be divided into three classes, with staggered three-year terms. Only one class of directors is elected at each annual meeting of our stockholders, with the other classes continuing for the remainder of their respective three-year terms. Because our stockholders do not have cumulative voting rights, our stockholders representing a majority of the shares of common stock outstanding will be able to elect all of our directors due to be elected at each annual meeting of our stockholders.

Meetings of and Actions by Stockholders. Our Bylaws provide that annual meetings of our stockholders may take place at the time and place designated by our Board. A special meeting of our stockholders may be called at any time by the Board, the chairman of the Board or the president. Subject to the rights of the holders of any series of preferred stock or any other class of stock or series thereof having a preference over the common stock as to dividends or upon liquidation, stockholders may take action only at a regular or special meeting of stockholders and not by written consent without a meeting.

Advance Notice Requirements for Stockholder Proposals and Director Nominations. Our Bylaws provide that stockholders seeking to bring business before an annual meeting of stockholders or to nominate candidates for election as directors at an annual meeting of stockholders must provide timely notice in writing. To be timely, a stockholder's notice must be delivered to our principal executive offices not less than 120 days prior to the date specified in the Company's proxy statement released to stockholders in connection with the previous year's annual meeting. If no annual meeting was held in the previous year or the date of the annual meeting has been changed by more than 30 days from the date contemplated at the time of the previous year's proxy statement, notice by the stockholder in order to be timely must be received by the Company no later than the close of business on the later of the 120 day prior to the date of such annual meeting or the tenth day following the day on which public announcement of the date of the meeting was first made. Our Bylaws also specify requirements as to the form and content of a stockholder's notice. These provisions may preclude stockholders from bringing matters before an annual meeting of stockholders or from making nominations for the election of directors at an annual meeting of stockholders.

Filling of Board Vacancies. Our Certificate of Incorporation and our Bylaws provide that vacancies in the Board and newly created directorships resulting from any increase in the authorized number of directors on the Board may be filled by a majority of the directors remaining in office, even though that number may be less than a quorum of the Board, or by a sole remaining director. A director so elected to fill a vacancy shall serve for the remaining term of the predecessor he or she replaced and until his or her successor is elected and has qualified, or until his or her earlier resignation, removal or death.

Amendment of the Certificate of Incorporation. Our Certificate of Incorporation may be amended, altered, changed or repealed at a meeting of the stockholders of the Company entitled to vote thereon by the affirmative vote of a majority of the outstanding stock entitled to vote thereon and a majority of the outstanding stock of each class entitled to vote thereon as a class, in the manner prescribed by the DGCL.

Amendment of the Bylaws. Our Bylaws may be altered, amended, changed, added-to or repealed (i) by the board of directors or (ii) by the stockholders entitled to vote. The bylaws can only be amended if such amendment would not conflict with the Certificate of Incorporation or applicable law. Any bylaw made or altered by the requisite number of stockholders may be altered or repealed by the Board or by the requisite number of stockholders.

Section 203 of the Delaware General Corporation Law

We are subject to Section 203 of the Delaware General Corporation Law ("Section 203"), which prohibits a Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years after the date that such stockholder became an interested stockholder, with the following exceptions:

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before such date, the board of directors of the corporation approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder;

- upon completion of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction began, excluding for purposes of determining the voting stock outstanding (but not the outstanding voting stock owned by the interested stockholder) those shares owned (i) by persons who are directors and also officers and (ii) employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or

- on or after such date, the business combination is approved by the board of directors and authorized at an annual or special meeting of the stockholders, and not by written consent, by the affirmative vote of at least 66 and 2/3% of the outstanding voting stock that is not owned by the interested stockholder.

In general, Section 203 defines a business combination to include the following:

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, lease, transfer, pledge or other disposition of 10% or more of the assets of the corporation to or with the interested stockholder;
- subject to certain exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder;
- any transaction involving the corporation that has the effect of increasing the proportionate share of the stock or any class or series of the corporation beneficially owned by the interested stockholder; or
- the receipt by the interested stockholder of the benefit of any loss, advances, guarantees, pledges or other financial benefits by or through the corporation.

In general, Section 203 defines an interested stockholder as an entity or person beneficially owning 15% or more of the outstanding voting stock of the corporation or any entity or person affiliated with or controlling or controlled by such entity or person.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is American Stock Transfer & Trust Company, 6201 15th Avenue, 2nd Floor, Brooklyn, NY 11219. Its phone number is 1(800)-937-5449. The transfer agent for any series of preferred stock, warrants, rights or units that we may offer under this prospectus will be named and described in the prospectus supplement for that series.

NASDAQ Global Market Listing

Our common stock is listed on the NASDAQ Global Market under the symbol “CLSN.”

DESCRIPTION OF WARRANTS

We may issue warrants for the purchase of our common stock or preferred stock, in one or more series. We may issue warrants independently or together with common stock or preferred stock, and the warrants may be attached to or separate from these securities.

The following description, together with the additional information we may include in any applicable prospectus supplement or free writing prospectus, summarizes the material terms and provisions of the warrants that we may offer under this prospectus and the related warrant agreements and warrant certificates. While the terms summarized below will apply generally to any warrants that we may offer, we will describe the particular terms of any series of warrants in more detail in the applicable prospectus supplement or any applicable free writing prospectuses. If we indicate in the prospectus supplement or a free writing prospectus, the terms of any warrants offered under that prospectus supplement may differ from the terms described below. However, no prospectus supplement or free

writing prospectus shall fundamentally change the terms that are set forth in this prospectus or offer a security that is not registered and described in this prospectus at the time of its effectiveness. Specific warrant agreements will contain additional important terms and provisions and will be incorporated by reference as an exhibit to the registration statement that includes this prospectus or as an exhibit to a current report on Form 8-K.

General

We will describe in the applicable prospectus supplement the terms of the series of warrants being offered, including:

- the offering price and aggregate number of warrants offered;
- the currency for which the warrants may be purchased;
- if applicable, the designation and terms of the securities with which the warrants are issued and the number of warrants issued with each such security or each principal amount of such security;
- if applicable, the date on and after which the warrants and the related securities will be separately transferable;
- the number of shares of common stock or preferred stock, as the case may be, purchasable upon the exercise of one warrant and the price at which these shares may be purchased upon such exercise;
 - if other than for cash, the property and manner in which the exercise price of the warrants may be paid;
 - the minimum number of warrants that may be exercisable at any time;
- the effect of any merger, consolidation, sale or other disposition of our business on the warrant agreements and the warrants;
 - the terms of any rights to redeem or call the warrants;
- any provisions for changes to or adjustments in the exercise price or number of securities issuable upon exercise of the warrants;
 - the dates on which the right to exercise the warrants will commence and expire;
 - the manner in which the warrant agreements and warrants may be modified;
- a discussion of any material or special U.S. federal income tax consequences of holding or exercising the warrants;
 - the terms of the securities issuable upon exercise of the warrants; and
 - any other specific terms, preferences, rights or limitations of or restrictions on the warrants.

Before exercising their warrants, holders of warrants will not have any of the rights of holders of the securities purchasable upon such exercise, including the right to receive dividends, if any, or, payments upon our liquidation, dissolution or winding up or to exercise voting rights, if any.

Exercise of Warrants

Each warrant will entitle the holder to purchase the securities that we specify in the applicable prospectus supplement or free writing prospectus at the exercise price that we describe in the applicable prospectus supplement or free writing prospectus. Unless we otherwise specify in the applicable prospectus supplement or free writing prospectus, holders of the warrants may exercise the warrants at any time up to 5:00 P.M. Eastern Time on the

expiration date that we set forth in the applicable prospectus supplement or free writing prospectus. After the close of business on the expiration date, unexercised warrants will become void.

Holders of the warrants may exercise the warrants by delivering the warrant certificate representing the warrants to be exercised together with specified information, and paying the required amount to the warrant agent in immediately available funds, as provided in the applicable prospectus supplement. We will set forth on the reverse side of the warrant certificate and in the applicable prospectus supplement or free writing prospectus the information that the holder of the warrant will be required to deliver to the warrant agent.

Upon receipt of the required payment and the warrant certificate properly completed and duly executed at the corporate trust office of the warrant agent or any other office indicated in the applicable prospectus supplement or free writing prospectus, we will issue and deliver the securities purchasable upon such exercise. If fewer than all of the warrants represented by the warrant certificate are exercised, then we will issue a new warrant certificate for the remaining amount of warrants. If we so indicate in the applicable prospectus supplement, holders of the warrants may surrender securities as all or part of the exercise price for warrants.

Enforceability of Rights by Holders of Warrants

Each warrant agent will act solely as our agent under the applicable warrant agreement and will not assume any obligation or relationship of agency or trust with any holder of any warrant. A single bank or trust company may act as warrant agent for more than one issue of warrants. A warrant agent will have no duty or responsibility in case of any default by us under the applicable warrant agreement or warrant, including any duty or responsibility to initiate any proceedings at law or otherwise, or to make any demand upon us. Any holder of a warrant may, without the consent of the related warrant agent or the holder of any other warrant, enforce by appropriate legal action its right to exercise, and receive the securities purchasable upon exercise of, its warrants.

Governing Law

Unless we provide otherwise in the applicable prospectus supplement, the warrants and warrant agreements will be governed by and construed in accordance with the laws of the State of Maryland.

Enforceability of Rights by Holders of Warrants

Each warrant agent will act solely as our agent under the applicable warrant agreement and will not assume any obligation or relationship of agency or trust with any holder of any warrant. A single bank or trust company may act as warrant agent for more than one issue of warrants. A warrant agent will have no duty or responsibility in case of any default by us under the applicable warrant agreement or warrant, including any duty or responsibility to initiate any proceedings at law or otherwise, or to make any demand upon us. Any holder of a warrant may, without the consent of the related warrant agent or the holder of any other warrant, enforce by appropriate legal action its right to exercise, and receive the securities purchasable upon exercise of, its warrants.

DESCRIPTION OF RIGHTS

We may issue rights to purchase our common stock or preferred stock, in one or more series. Rights may be issued independently or together with any other offered security and may or may not be transferable by the person purchasing or receiving the subscription rights. In connection with any rights offering to our stockholders, we may enter into a standby underwriting arrangement with one or more underwriters pursuant to which such underwriters will purchase

any offered securities remaining unsubscribed after such rights offering. In connection with a rights offering to our stockholders, we will distribute certificates evidencing the rights and a prospectus supplement to our stockholders on the record date that we set for receiving rights in such rights offering.

The applicable prospectus supplement or free writing prospectus will describe the following terms of rights in respect of which this prospectus is being delivered:

- the title of such rights;

- the securities for which such rights are exercisable;
 - the exercise price for such rights;
- the date of determining the security holders entitled to the rights distribution;
- the number of such rights issued to each security holder;
 - the extent to which such rights are transferable;
- if applicable, a discussion of the material United States federal income tax considerations applicable to the issuance or exercise of such rights;
- the date on which the right to exercise such rights shall commence, and the date on which such rights shall expire (subject to any extension);
 - the conditions to completion of the rights offering;
- any provisions for changes to or adjustments in the exercise price or number of securities issuable upon exercise of the rights;
- the extent to which such rights include an over-subscription privilege with respect to unsubscribed securities;
- if applicable, the material terms of any standby underwriting or other purchase arrangement that we may enter into in connection with the rights offering; and
- any other terms of such rights, including terms, procedures and limitations relating to the exchange and exercise of such rights.

Each right will entitle the holder thereof the right to purchase for cash such amount of shares of common stock or preferred stock, or any combination thereof, at such exercise price as shall in each case be set forth in, or be determinable as set forth in, the prospectus supplement relating to the rights offered thereby. Rights may be exercised at any time up to the close of business on the expiration date for such rights set forth in the prospectus supplement. After the close of business on the expiration date, all unexercised rights will become void.

Rights may be exercised as set forth in the prospectus supplement relating to the rights offered thereby. Upon receipt of payment and the proper completion and due execution of the rights certificate at the corporate trust office of the rights agent or any other office indicated in the prospectus supplement, we will forward, as soon as practicable, the shares of common stock and/or preferred stock purchasable upon such exercise. We may determine to offer any unsubscribed offered securities directly to persons other than stockholders, to or through agents, underwriters or dealers or through a combination of such methods, including pursuant to standby underwriting arrangements, as set forth in the applicable prospectus supplement.

DESCRIPTION OF UNITS

We may issue, in one more series, units consisting of our common stock, preferred stock, and/or warrants and/or rights for the purchase of common stock or preferred stock in any combination. While the terms we have summarized

below will apply generally to any units that we may offer under this prospectus, we will describe the particular terms of any series of units in more detail in the applicable prospectus supplement or free writing prospectus. The terms of any units offered under a prospectus supplement may differ from the terms described below.

We will file as exhibits to the registration statement of which this prospectus is a part, or will incorporate by reference from reports that we file with the SEC, the form of unit agreement that describes the terms of the series of

units we are offering, and any supplemental agreements, before the issuance of the related series of units. The following summaries of material terms and provisions of the units are subject to, and qualified in their entirety by reference to, all the provisions of the unit agreement and any supplemental agreements applicable to a particular series of units. We urge you to read the applicable prospectus supplements related to the particular series of units that we may offer under this prospectus, as well as any related free writing prospectuses, and the complete unit agreement and any supplemental agreements that contain the terms of the units.

General

Each unit will be issued so that the holder of the unit is also the holder of each security included in the unit. Thus, the holder of a unit will have the rights and obligations of a holder of each included security. The unit agreement under which a unit is issued may provide that the securities included in the unit may not be held or transferred separately, at any time or at any time before a specified date.

We will describe in the applicable prospectus supplement or free writing prospectus the terms of the series of units being offered, including:

- the designation and terms of the units and of the securities comprising the units, including whether and under what circumstances those securities may be held or transferred separately;
 - any provisions of the governing unit agreement that differ from those described below; and
- any provisions for the issuance, payment, settlement, transfer or exchange of the units or of the securities comprising the units.

The provisions described in this section, as well as those described under “Description of Capital Stock,” “Description of Warrants,” and “Description of Rights” will apply to each unit and to any common stock, preferred stock, warrant or right included in each unit, respectively.

Issuance in Series

We may issue units in such amounts and in such numerous distinct series as we determine. Enforceability of Rights by Holders of Units

Each unit agent will act solely as our agent under the applicable unit agreement and will not assume any obligation or relationship of agency or trust with any holder of any unit. A single bank or trust company may act as unit agent for more than one series of units. A unit agent will have no duty or responsibility in case of any default by us under the applicable unit agreement or unit, including any duty or responsibility to initiate any proceedings at law or otherwise, or to make any demand upon us. Any holder of a unit may, without the consent of the related unit agent or the holder of any other unit, enforce by appropriate legal action its rights as holder under any security included in the unit.

PLAN OF DISTRIBUTION

Pursuant to General Instruction I.B.6 of Form S-3, we are permitted to utilize the registration statement of which this prospectus forms a part to sell a maximum amount of securities equal to one-third of the aggregate market value of the outstanding voting and non-voting common equity held by our non-affiliates in any 12 month period. We may, from time to time, offer the securities registered hereby up to this maximum amount.

We may sell the securities, from time to time, to or through underwriters or dealers, through agents or remarketing firms, or directly to one or more purchasers pursuant to:

- underwritten public offerings;
 - negotiated transactions;
 - block trades;
- “at the market offerings,” within the meaning of Rule 41 5(a)(4) of the Securities Act, to or through a market maker or into an existing trading market, on an exchange or otherwise, at prevailing market prices;
- through a combination of these methods. We may distribute securities from time to time in one or more transactions:
 - at a fixed price or prices, which may be changed;
 - at market prices prevailing at the time of sale;
 - at prices related to such prevailing market prices; or
 - at negotiated prices.

A prospectus supplement or supplements will describe the terms of the offering of the securities, including:

- the name or names of the underwriters, if any;
- if the securities are to be offered through the selling efforts of brokers or dealers, the plan of distribution and the terms of any agreement, arrangement, or understanding entered into with broker(s) or dealer(s) prior to the effective date of the registration statement, and, if known, the identity of any broker(s) or dealer(s) who will participate in the offering and the amount to be offered through each;
 - the purchase price of the securities and the proceeds we will receive from the sale;
- if any of the securities being registered are to be offered otherwise than for cash, the general purposes of the distribution, the basis upon which the securities are to be offered, the amount of compensation and other expenses of distribution, and by whom they are to be borne;
 - any delayed delivery arrangements;
- any over-allotment options under which underwriters may purchase additional securities from us;

- any agency fees or underwriting discounts and other items constituting agents' or underwriters' compensation;
- any public offering price;
- any discounts, commissions or commissions allowed or reallocated or paid to dealers;
- the identity and relationships of any finders, if applicable; and
- any securities exchange or market on which the securities may be listed.

Only underwriters named in the prospectus supplement will be underwriters of the securities offered by the prospectus supplement.

If underwriters are used in the sale, they will acquire the securities for their own account and may resell the securities from time to time in one or more transactions at a fixed public offering price or at varying prices determined at the time of sale. The obligations of the underwriters to purchase the securities will be subject to the conditions set forth in the applicable underwriting agreement. We may offer the securities to the public through underwriting syndicates represented by managing underwriters or by underwriters without a syndicate. Unless otherwise indicated in the prospectus supplement, subject to certain conditions, the underwriters will be obligated to purchase all of the securities offered by the prospectus supplement, other than securities covered by any over-allotment option. Any public offering price and any discounts or concessions allowed or reallocated or paid to dealers may change from time to time. We may use underwriters with whom we have a material relationship. We will describe in the prospectus supplement, naming the underwriter, the nature of any such relationship.

We may use a remarketing firm to offer the securities in connection with a remarketing arrangement upon their purchase. Remarketing firms will act as principals for their own account or as agents for us. These remarketing firms will offer or sell the securities pursuant to the terms of the securities. A prospectus supplement will identify any remarketing firm and the terms of its agreement, if any, with us and will describe the remarketing firm's compensation. Remarketing firms may be deemed to be underwriters in connection with the securities they remarket.

If we offer and sell securities through a dealer, we or an underwriter will sell the securities to the dealer, as principal. The dealer may resell the securities to the public at varying prices to be determined by the dealer at the time of resale. Any such dealer may be deemed to be an underwriter of the securities offered and sold. The name of the dealer and the terms of the transaction will be set forth in the applicable prospectus supplement.

We may sell securities directly or through agents we designate from time to time. We will name any agent involved in the offering and sale of securities and we will describe any commissions we will pay the agent in the prospectus supplement. Unless the prospectus supplement states otherwise, our agent will act on a best-efforts basis for the period of its appointment.

We may sell securities directly to one or more purchasers without using underwriters or agents. Underwriters, dealers and agents that participate in the distribution of the securities may be underwriters as defined in the Securities Act, and any discounts or commissions they receive from us and any profit on their resale of the securities may be treated as underwriting discounts and commissions under the Securities Act.

We may authorize agents or underwriters to solicit offers by certain types of institutional investors to purchase securities from us at the public offering price set forth in the prospectus supplement pursuant to delayed delivery

contracts providing for payment and delivery on a specified date in the future. We will describe the conditions to these contracts and the commissions we must pay for solicitation of these contracts in the prospectus supplement.

We may provide agents and underwriters with indemnification against civil liabilities, including liabilities under the Securities Act, or contribution with respect to payments that the agents or underwriters may make with

respect to these liabilities. Agents and underwriters may engage in transactions with, or perform services for, us in the ordinary course of business.

We may offer new issues of securities with no established trading market. Any underwriters may make a market in these securities, but will not be obligated to do so and may discontinue any market making at any time without notice. We cannot guarantee the liquidity of the trading markets for any securities.

Any underwriter may engage in over-allotment, stabilizing transactions, short-covering transactions and penalty bids in accordance with Regulation M under the Exchange Act. Over-allotment involves sales in excess of the offering size, which create a short position. Stabilizing transactions permit bids to purchase the underlying security so long as the stabilizing bids do not exceed a specified maximum price. Syndicate-covering or other short-covering transactions involve purchases of the securities, either through exercise of the over-allotment option or in the open market after the distribution is completed, to cover short positions. Penalty bids permit the underwriters to reclaim a selling concession from a dealer when the securities originally sold by the dealer are purchased in a stabilizing or covering transaction to cover short positions. Those activities may cause the price of the securities to be higher than it would otherwise be. If commenced, the underwriters may discontinue any of the activities at any time.

Any underwriters that are qualified market makers on the NASDAQ Global Market may engage in passive market making transactions in the common stock on the NASDAQ Global Market in accordance with Regulation M under the Exchange Act, during the business day prior to the pricing of the offering, before the commencement of offers or sales of the common stock. Passive market makers must comply with applicable volume and price limitations and must be identified as passive market makers. In general, a passive market maker must display its bid at a price not in excess of the highest independent bid for such security; if all independent bids are lowered below the passive market maker's bid, however, the passive market maker's bid must then be lowered when certain purchase limits are exceeded. Passive market making may stabilize the market price of the securities at a level above that which might otherwise prevail in the open market and, if commenced, may be discontinued at any time.

LEGAL MATTERS

The validity of the securities being offered by this prospectus will be passed upon by Venable LLP, Baltimore, Maryland. Any underwriter, dealer or agent may be advised about issues relating to any offering by its own legal counsel.

EXPERTS

The financial statements incorporated in this Prospectus by reference to the Annual Report on Form 10-K for the year ended December 31, 2008 have been so incorporated in reliance on the report of Stegman & Company, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We file annual, quarterly and special reports, proxy statements and other information with the SEC. You may read and copy any document we file at the SEC's Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1- 800-SEC-0330 for more information about the operation of the public reference room. The SEC maintains an Internet site that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC, Celsion Corporation. The SEC's Internet site can be found at

www.sec.gov.

The SEC allows us to incorporate by reference the information we file with it, which means that we can disclose important information to you by referring you to another document that we have filed separately with the SEC. You should read the information incorporated by reference because it is an important part of this prospectus.

We incorporate by reference the following information or documents that we have filed with the SEC (Commission File No. 001- 15911):

- our annual report on Form 10-K for the year ended December 31, 2008, filed with the SEC on March 27, 2009;
- our current report in Form 8-K, filed with the SEC on February 19, 2009, as amended by a Form 8-K/A filed on February 20, 2009;
 - our current report in Form 8-K, filed with the SEC on March 3, 2009;
- the description of our common stock, which is registered under Section 12 of the Exchange Act, in our registration statement on Form 8-A, filed with the SEC on May 26, 2000, as amended by a Form 8-A/A dated February 7, 2008; and
- the description of our Preferred Share Purchase Rights, which are registered under Section 12 of the Exchange Act, in our registration statement on Form 8-A, filed with the SEC on September 9, 2002, as amended by a Form 8-A/A dated February 11, 2003 and a Form 8-A/A dated February 7, 2008.

Any information in any of the foregoing documents will automatically be deemed to be modified or superseded to the extent that information in this prospectus or in a later filed document that is incorporated or deemed to be incorporated herein by reference modifies or replaces such information.

We also incorporate by reference any future filings (other than current reports furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits filed on such form that are related to such items) made with the SEC pursuant to Sections 13(a), 13(c), 14 or 15 (d) of the Exchange Act, until we file a post-effective amendment that indicates the termination of the offering of the securities made by this prospectus. Information in such future filings updates and supplements the information provided in this prospectus. Any statements in any such future filings will automatically be deemed to modify and supersede any information in any document we previously filed with the SEC that is incorporated or deemed to be incorporated herein by reference to the extent that statements in the later filed document modify or replace such earlier statements.

We will provide to each person, including any beneficial owner, to whom a prospectus is delivered, without charge upon written or oral request, a copy of any or all of the documents that are incorporated by reference into this prospectus but not delivered with the prospectus, including exhibits which are specifically incorporated by reference into such documents. Requests should be directed to: Celsion Corporation, Attention: Corporate Secretary, 10220-L Old Columbia Road, Columbia, MD 21046-2364, telephone (410) 290-5390.

5,000 Shares of 8% Series A Redeemable Convertible Preferred Common Stock

Warrants to Purchase 2,083,333 Shares of Common Stock

CELSION CORPORATION

CELSION CORPORATION
PROSPECTUS SUPPLEMENT
DOMINICK & DOMINICK LLC
January 12 , 2011